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Opening an office in Beijing or Moscow? Beware of local vendors that offer name-brand software at deep discounts, because it's likely to be counterfeit. Find out how to avoid the technical and legal liabilities of pirated software. Page 39

NEWSPAPER

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Users Remain Loyal to Novell Despite Turmoil

Vendor sets layoff plans, names operations chief, looks to focus on high-growth markets

BY MATT HAMBLEN

Novell Inc. went back into restructuring mode last week, announcing a series of moves that included a 600-worker layoff, the promotion of its top sales executive to also run development and marketing, and a plan to concentrate its resources on high-growth markets such as Linux.

The software vendor also is looking at selling its Celerant Consulting unit, which would largely undo its 2001 acquisition of Cambridge Technology Partners. Novell said it plans to retain a separate IT consulting group that focuses on work involving the company's own products.

Despite the onslaught of restructuring actions, 10 longtime Novell customers said they were taking the developments largely in stride after having weathered earlier management transitions and business downturns at the vendor in recent years.

Several of the users said they wish Novell's SUSE Linux software had taken a bigger share of the Linux market by now. And some are worried that the planned layoffs could hit the Novell sales reps and software developers they work with.

But all of the users said they remain loyal to Novell's products and the company's Linux-driven strategy.

"Even with the lay-

Novell, page 16

INSIDE PAGE 16

Belated SQL Server Upgrade Retains Its Appeal to Testers

Microsoft launches new database release after two-year delay

BY ERIC LAI AND HEATHER HAVENSTEIN

Microsoft Corp. is finally set to launch its SQL Server 2005 database today. And despite a two-year delay, several users who have tested the software cited the improved performance and new functionality it brings as positive developments that likely will convince them to upgrade soon.

For example, beta tester Mayur Raichura, managing director of information services at The Long & Foster Cos. in Fairfax, Va., said he is "hoping that with the five years they have spent developing and tightening this product, this is truly not a 1.0 version." Raichura added that he wants to avoid the need for "some serious patch management" or deployment of service packs.

But he said that based on the features he has tested so far in the beta version, SQL Server 2005 could rival the

SQL Server, page 51

Laws, Breaches Lend Urgency to Retail Security

BY JAIKUMAR VIJAYAN
CHICAGO

Growing privacy concerns and emerging laws governing the use of sensitive personal information are increasing the pressure on retailers to make sure that their data security practices are rock-solid, according to IT managers at a conference here last week.

They added that an inability to demonstrate due diligence on security could expose companies to serious reputational damage, financial losses and increased customer churn.

Brian Kilcourse, a former retail industry CIO who is now a consultant at Retail Systems Alert Group Inc. in

Security, page 16

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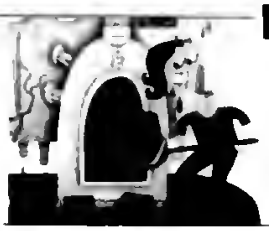

Dirty Data Blights the Bottom Line

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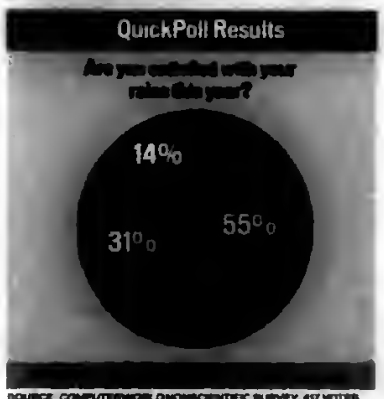

SOURCE: COMPUTERWORLD/NONSCIENTIFIC SURVEY, 417 VOTES

Grooming Future CIOs

CAREERS: Korn/Ferry International's Mark Polansky discusses the importance of identifying and developing the CIOs of the future and offers some tips. **QuickLink 57634**

Preserving Log Data Integrity

SECURITY: As federal record-keeping regulations mushroom, it's increasingly important to save and secure your log data in case it's needed by auditors — or for s day in court. Columnist Jian Zhen outlines the steps for keeping unaltered logs. **QuickLink 57658**

Middleware Primer

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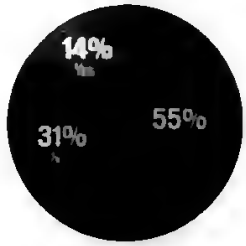

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AT DEADLINE

Oracle CFO to Leave After Four Months

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Veritas Deal Blamed For Symantec Loss

Symantec Corp. stumbled in its second quarter, reporting a large loss on charges associated with its Veritas Software Corp. acquisition. Symantec also warned that the results in the current quarter will be worse than projected.

SYMANTEC BY THE NUMBERS

	REVENUE	[illegible]
Q2 06	$[illegible]	($251M)
Q2 05	$818M	$135M

EDS Plans to Resell Fujitsu Servers

Electronic Data Systems Corp. has reached an agreement with Fujitsu Ltd. to resell Fujitsu's Itanium 2-based PrimeQuest servers and other hardware as part of its service packages. Over the next three years, Fujitsu hopes to sell 2,000 servers via EDS, one-fifth of the systems' expected total sales. EDS will also offer Fujitsu's Stylistic and LifeBook tablet PCs.

HP, Sun Take Different Paths With Thin Clients

HP rolls out blade PCs; Sun works on server-based clients

BY PATRICK THIBODEAU

Sun Microsystems Inc. and Hewlett-Packard Co. are each offering new thin-client computing technologies, but they're giving users different choices: server-based clients versus ones that are supported by rack-mounted blade PCs.

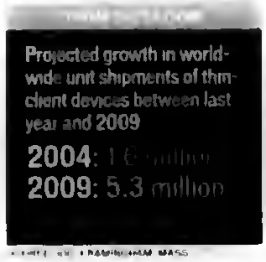
HP today plans to start shipping blade PCs equipped with a version of Advanced Micro Devices Inc.'s Athlon processor developed for the new systems. The devices replace a line of desktop blades based on Transmeta Corp.'s Efficeon processor. HP put sales of those models on hold in January, when Transmeta said it would stop making Efficeon.

Sun, which offers the Sun Ray line of thin clients, last week announced a deal under which thin-client market leader Wyse Technology Inc. will bundle its devices with software that Sun acquired when it bought Tarantella Inc. in July.

The software, called Secure Global Desktop, lets thin clients access applications on a variety of systems, including ones running Windows, Linux or Unix.

The business arguments for moving to either server-based thin clients or blade PCs in data centers are similar. Both technologies promise IT cost reductions through more centralized systems management and reduced desktop support needs. But that's where agreement ends among users and among vendors.

Michael Sexton, director of IT at Princeton Resorts Group LLC in Phoenix, is supporting about 200 of his end users with Wyse thin clients attached to servers that run the company's Windows and terminal server applications. Blade PCs aren't attractive to him because they're more complicated to support than the Wyse devices are, he said.


Projected growth in worldwide unit shipments of thin-client devices between last year and 2009
2004: 1.6 million
2009: 5.3 million

> **"I don't have 200 CPUs that can go bad, [or] 400 sticks of RAM. I only have nine servers."**
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"I don't have 200 CPUs that can go bad, [or] 400 sticks of RAM," Sexton said. "I only have nine servers."

But Roger Neal, IT director at Duncan Regional Hospital in Duncan, Okla., advocates the use of blade PCs. He has installed blade devices developed by ClearCube Technology Inc. to support more than 220 end users.

Blade PCs "are going to continue to grow [in performance and functionality] as fast as the normal desktop, and I think that is a little bit of an advantage" over server-based thin clients, Neal said. Blades also require less-specialized skills within IT than server-based thin clients, which may need employees with Citrix training, he added.

HP's Athlon-based blades will support one user per device and provide a standard corporate desktop image that's indistinguishable from what users would get on a desktop PC, said Tad Bodeman, director of client consolidation solutions at HP's personal systems group.

One of the reasons HP went with the Transmeta chip was its relatively low power use, with each blade using about 25 watts, but HP says the AMD chip is similar.

In addition to the Windows-based blade PCs, HP offers a range of server-based thin clients that support a variety of operating systems. Similarly, Sun and Wyse said that embedding the Secure Global Desktop software in a thin client will allow the device to deliver applications from any source via a network server.

Blade PCs are "not really a solution in a heterogeneous environment" because they usually rely on Windows, said Greg Wolff, director of desktop infrastructure software at Sun.

One certainty is that interest in thin clients among corporate users is increasing, said Bob O'Donnell, an analyst at IDC. Thin clients, whether they're running off a blade PC or a server, currently account for just over 3% of all corporate desktops, according to O'Donnell. By 2009, that figure is expected to increase to about 8%, he said. **58003**

HP Wins Bidding for Interex's Member Data

Vendor says it will protect information collected on users

BY PATRICK THIBODEAU

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HP offered $66,500 for the database and mailing list, topping two other bidders. Legal documents detailing the result of the bidding process were filed last Monday in U.S. Bankruptcy Court for the Northern District of California.

By purchasing what are, in effect, the records of its own customers, HP sees itself as being akin to a white knight.

The company wouldn't comment on how it plans to use the information, but HP spokesman Don Gentile said the Interex data is being purchased "to ensure that the privacy of our customers would not be compromised."

Sunnyvale, Calif.-based Interex filed for Chapter 7 bankruptcy protection in August after closing its operations in July and canceling its annual HP World conference. HP World faced new competition from a technical conference launched by HP this year.

The user group shut down after incurring about $4 million in debt, and the sale of the customer database and mailing list by the court-appointed trustee overseeing Interex's remaining assets was designed to help pay off its creditors.

The bidding process began after Redmond, Wash.-based Genisys Corp., which sells refurbished HP hardware, offered to buy the database for $15,000 [QuickLink 57541]. Trustee Carol W. Wu then conducted an auction-style sale after receiving competing bids from HP and a third bidder that wasn't identified in the court papers. **57999**

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Bank of America Ready to Begin Work on SOA Update

System expansion needed for surge in transactions

BY HEATHER HAVENSTEIN

Bank of America Corp. plans to soon begin work on the third generation of its service-oriented architecture to support an expected doubling of Web services transactions from its current 550 million per month.

The next-generation SOA, expected by the third quarter of next year, will use IBM's Information FrameWork (IFW), a set of business models and an information architecture blueprint, to integrate application processes.

Bank of America is still negotiating with IBM for an enterprise license, said Kim Kazmaier, senior integration architect at the Charlotte, N.C.-based bank.

Kazmaier said the IFW will allow Bank of America to map business requirements, such as automating the entire procedure of opening new accounts, into a business process that is linked using Web services.

"That is a real-world example of a reference model [that] fully describes those steps and defines services interfaces for the steps," he said. "Without a reference architecture, you can spend an inordinate amount of time and energy building and maintaining that holistic view of the process."

The bank plans to begin using IFW by the end of this year to map out new standard processes within its SOA that can cross customer channels such as online banking and call centers. By next September, Kazmaier said, he expects the bank to have added to production 20 to 30 Web services using IFW.

The new SOA model will build on the current second-generation system, which is based on the integration platform of Fairfax, Va.-based WebMethods Inc. and integrates existing applications.

Bank of America now has about 100 Web services that integrate 1.8 billion customer interactions per month occurring online, in call centers and branches, and at ATMs.

For example, Web services support all voice response for call centers, as well as money transfers and transaction histories for online banking.

Using IFW, the bank expects to more quickly develop new Web services at a lower cost while also forging closer ties between IT and the business, Kazmaier added.

"The business talks about how they can increase revenue by improving customer service," he said. "The business can communicate what their requirements are, and we can show the business what the process would be."

ESB on the Way

Bank of America also plans to deploy an enterprise service bus (ESB) as part of the next-generation SOA to help it monitor Web service compliance with service-level agreements. The bank is still gathering requirements for the ESB it will select for the project. Kazmaier declined to provide details about those plans.

Bank of America launched its first SOA in 1998 with a middleware message-oriented system using the Java Message Service standard and IBM MQSeries middleware.

In 2001, as the bank was preparing to roll out a new J2EE-based customer interaction system, it began using XML and Web services to integrate existing applications into the new system.

In 2002 and 2003, bank officials replaced the first-generation SOA with WebMethod's platform, which provides Web services adapters to integrate customer data over multiple channels.

Bank of America and Wells Fargo Bank are among the biggest users of SOA technology in terms of the number and quality of Web services they have in production, said Jason Bloomberg, senior analyst at ZapThink LLC in Cambridge, Mass. **57997**

Federal Panel Pushes Plan for EHR Adoption

Sends Congress 14 proposals

BY JAIKUMAR VIJAYAN

A federal commission late last month called for a national patient authentication system to enable faster adoption of electronic health records (EHR).

The Commission on Systemic Interoperability, established by the Medicare Modernization Act of 2003, also proposed creating financial incentives to help convince health care providers to adopt an EHR plan and recommended the abolition of regulations that may hinder the adoption of the technology.

In a report submitted to Congress on Oct. 25, the commission listed 14 recommendations focused on three areas: adoption challenges, interoperability of health care data and secure connectivity between networks. The commission's charter ended Oct. 31.

The report highlights the challenges in implementing a connected system of instantly accessible health records, said Robert Seliger, chairman of the Chicago-based Healthcare Information and Management Systems Society's steering committee on integration and interoperability.

Though there have been calls over the past several years to make patient information more easily accessible to providers and patients, cost issues, security and privacy concerns, and a lack of interoperability have been major stumbling blocks to implementation, said Seliger, also CEO of Sentillion Inc., an Andover, Mass.-based vendor of identity management technologies.

Overcoming Roadblocks

The commission's recommendations aim to overcome such roadblocks, said Scott Wallace, chairman of the commission and president of The National Alliance for Health Information Technology, a Washington-based organization that promotes the use of IT systems in health care.

For instance, a Social Security-type identification system could be used by physicians to quickly get data on individual patients, Wallace said.

A patchwork of privacy laws in different states also poses a challenge to the implementation of EHR, Wallace said. To address that problem, the commission proposed a national privacy standard based on the federal Health Insurance Portability and Accountability Act, Wallace said.

"On the adoption side, we focused on the need for financial incentives" for health care providers, Wallace said, acknowledging that an EHR system offers more benefits to other groups. In fact, he said, consumers and insurance companies are the biggest potential beneficiaries of a connected health care system.

Sam Karp, chief program officer at the California HealthCare Foundation, an Oakland-based nonprofit organization focused on improving health care in the state, noted that there is little immediate incentive for providers to support EHR.

"By far the biggest hurdle is cost, which is why there has been very little adoption so far" beyond large health care providers that can afford it, he said.

"This is still a developing market," Karp said. "Physicians who are being asked to make a significant capital outlay on systems want to be assured that the investments they are making will be sound."

The commission also recommended using product certification, interoperable data standards, and standard product identifiers and vocabulary to ensure that health care data is accessible as needed.

Health Care IT Efforts

Government programs and departments focused on health care IT efforts:

- **American Health Information Community:** Established in June 2005 by Department of Health and Human Services Secretary Mike Leavitt to develop common standards for electronic health records.
- **Agency for Healthcare Research and Quality:** Originally created in 1989; reauthorized in 1999 to sponsor projects that are focused on a range of health care IT projects, including EHR.
- **Center for Medicare and Medicaid Services:** Supports several initiatives involving health care IT, including a project that provides primary care physicians with information on more than 60 private EHR systems.

SOURCE: COMMISSION ON SYSTEMIC INTEROPERABILITY

Karp said those recommendations are helpful because of the current lack of product standards.

Not long before the commission's charter ended, U.S. Health and Human Services Secretary Mike Leavitt formed the American Health Information Community to provide recommendations on how to make health records digital and interoperable while ensuring the privacy and security of those records. **57996**

BRIEFS

Dell Revenue to Fall Short of Guidance

Dell Inc. said it will take a charge of $450 million after third-quarter results fall short of projections because of lower-than-expected sales. Dell said it will take the charge to restructure its workforce and replace broken OptiPlex desktop systems. Third-quarter revenue is expected to be $13.9 billion versus the earlier projection of $14.1 billion to $14.5 billion. Dell will report its earnings Thursday.

Sun Sales Are Up, But Losses Persist

Despite some bright spots, with improved sales of its Opteron-based server line and midrange storage arrays, Sun Microsystems Inc. reported another net loss for its first fiscal quarter.

Q1 '06		$123M)
Q1 '05		$133M)

Case Resigns From Time Warner Board

America Online Inc. co-founder Steve Case has resigned from Time Warner Inc.'s board of directors. Case is leaving Time Warner to devote more time to Revolution Health Group, an investment company he launched in April with stakes in health care and hospitality businesses. Case remains a major Time Warner shareholder.

AMD, IBM Extend Technology Pact

Advanced Micro Devices Inc. has expanded a chip technology partnership with IBM to include exploratory research into a range of advanced chip-related technologies through 2011. The agreement was set to expire in 2008. It calls for the companies to collaborate on the development of new transistor, interconnect, lithography and die-to-package connection technologies.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW PAULSEN

IT's 'Hero Culture' Stunts Growth . . .

. . . of mature application development processes. Many IT shops expect their top programmers to save the day on foundering app-dev projects, says Erik Frieberg, vice president of marketing and strategy at Borland Corp. in Scotts Valley, Calif. But that only shows how

immature their software development processes are, Frieberg argues. He contends that an "IT hero culture" contributes to the continning failure of projects in the eyes of end users because coding saviors often come late to a project and aren't immersed in the business requirements. His evidence? An annual report from The Standish Group International Inc. that says 66% of IT projects last year were perceived to have failed in some way. "Business users tend to remember the initial requirements, while IT recalls what was agreed to after the project was scaled back," Frieberg says. To help impose project discipline, IT should use application life-cycle management (ALM) technology, Frieberg suggests. Microsoft Corp. and IBM have such offerings, but Frieberg hopes you'll consider his company's wares. In next year's first quarter, Borland plans to update Core Analyst, one of its ALM tools. New features will include improved project storyboarding techniques designed to better show how data flows through a new application, as well as a refresh of rapid prototyping features.

Boost your WAN's pokey performance . . .

. . . by installing data acceleration appliances. Richard Pierce, CEO of Orbital Data Corp. in San Mateo, Calif., says the "demand profile" for WAN optimization has changed from point-to-point needs to servicing numerous branch offices that access multiple data centers. That shift means WAN optimization technology has to account for the constant flux in network traffic, he says. Lucky for you, Pierce claims his company's new Orbital 6000 appliance family with automatic optimization software can detect specific compression and acceleration techniques needed by applications. For example, he says, Windows users bogged down by Microsoft's chatty Common Internet File System should get a performance lift from Orbital's predictive prefetching scheme, which grabs next-in-line data before the application requests it. Available this week, the Orbital 6800 handles data rates of up to 1Gbit/sec. and starts at $21,000; the 6500 works at up to 45Mbit/sec. and is priced from $5,000.

Orbital 6800 speeds up WAN traffic.

Endpoint security software . . .

. . . checks up on PCs and other devices trying to get on a network. McAfee Inc. plans to release a beta of its Policy Enforcer software by the end of the month and ship the product early next year. According to Michelle Cobb, a group product manager at McAfee, the tool can check more than 400 security parameters on computers before they access your network, ensuring that the machines meet policies on everything from operating system patches to antivirus software. You'll also need McAfee's ePolicy Orchestrator, which Cobb claims has already been installed by 30,000 customers.

The corporate share of wireless data . . .

2.4B Global users of wireless voice and data services in 2009, says Yankee Group

. . . services remains flat, as consumers continue to dominate the airwaves. A report being released this week by Boston-based Yankee Group Research Inc. predicts that the enterprise portion of wireless data services will barely budge by 2009, from 9.8% of the total this year to 9.9%. "Business users still like voice," says Yankee analyst Keith Mallinson. And, not surprisingly, the report indicates that by 2009, the lion's share of new wireless voice subscribers — 41% — will be in China and India. But Mallinson notes that while the number of wireless voice users in India will more than double in the next five years, it will amount to only 14.5% of the population, compared with more than 90% saturation in many European countries.

Military-grade security tool is destined . . .

. . . for use on thin clients. Ed Hammersla, CEO of Trusted Computer Solutions Inc. in Herndon, Va., says his company has signed a nonexclusive deal to port its NetTop2 data access software to Wyse Technology Inc.'s thin-client devices. With NetTop2, which is in beta testing, government analysts and contractors who use the Wyse devices will be able to access multiple classified databases and applications from a single thin client. Hammersla says the users currently need dedicated terminals for each data source. NetTop2 will work on systems that are running secure versions of Linux based on the National Security Agency's Security-Enhanced Linux technology. That will include Red Hat Enterprise Linux Version 5 when it ships next year, Hammersla says. **57965**

Bank Moves to Prioritize Patching of Key Systems

BY JAIKUMAR VIJAYAN

Q&A

THE CONSTANT NEED to patch systems on its global network has driven Standard Chartered Bank to adopt a risk-based approach to managing security vulnerabilities. Instead of rushing to patch every flaw disclosed by its software vendors, the London-based bank plans to identify the most pressing problems and prioritize its responses based on the value of the IT assets at risk. **John Meakin**, *group head of information security at Standard Chartered, discussed the bank's strategy with* Computerworld *late last month.*

What's driving this whole effort? Deploying patches across a global network is a big challenge. Given that we have already invested in automated [patch] distribution [and] that we think we have a very efficient way of capturing the initial information about a vulnerability and a patch, we were looking to see what other scope we had of making this problem less intractable.

How have you gone about doing that? We really have said the only way of solving this problem is to truly target where we deploy patches and when. Clearly, some of the servers on our network are more important than others in terms of the impact on our business. Equally, some of those servers are subject to a greater likelihood of any vulnerability on them being exploited. By measuring these two factors across the whole asset inventory on our network, we're able to know which of our high-value boxes are most exposed when new patches are released.

How big a challenge has it been? It's very simple, very logical and very easy [conceptually]. But actually doing it is a challenge in itself. First of all, it presupposes that you have a very accurate asset inventory. We've already made some investments on our network which have given us the beginnings of that asset inventory.

Secondly, we have made investments in tools which scan for the existence of vulnerabilities. The third piece of the puzzle, as an add-on to asset inventory, is a measure of just how valuable each box is, based on the data and the application that it supports. The last piece of the picture is the ability to model, in a repeatable way, how easy it is for a vulnerability on a particular box to be exploited. If you add this piece, all of a sudden what was once an impossible task becomes a more possible task.

How effective has the risk-based strategy been in helping you deal with vulnerabilities? We haven't finished this yet. We've taken the risk-driven approach over a period of the last two to three years. We started focusing our efforts by scanning for where the vulnerabilities are, and certainly we have deployed our proprietary risk inventory in order to target the work of patching. Going forward, we're adding this final threat-modeling piece.

But you'll still be patching all of your systems, right? Exactly. We would have a patch cycle where we first deal with value-high/exposure-high systems, then value-medium/exposure-high, value-medium/exposure-medium and so on. We'll leave the low-value/low-risk systems until we have a regular software release.

How easy has it been getting business managers to participate in the process of rating the risks to systems? Not easy. I would still say that we get 50-50 direct participation of business users. Sometimes it's a business-aligned IT guy who is engaged in the evaluation process.

The process itself is sort of self-correcting and is really quite sensitive to overvaluation. If I walk into one of our [business unit] head's office and ask him how valuable a system is, his natural reaction is to say "high." What we've found gets better business involvement is when we go back and say to them, "OK, you've gone through this valuation process and come out with a 5 for confidentiality, integrity and availability. You do realize that means you've got to make the maximum investment in securing those systems?" **57980**

Children's Hospital Trims Backup With Disk-to-Disk

Now urgent restore requests are met in minutes, not hours

BY LUCAS MEARIAN

Children's Hospital in Boston was dealing with a tape backup nightmare early this year, with a backup window that at times lasted 18 hours and often caused failed tape drives and shutdowns.

On top of at least two drive failures each month, the sluggish 30-to-40MB/sec. data transfer speeds guaranteed that the backup window for some 300 servers would continue to grow.

"The backup windows just kept growing and growing," said Paul Scheib, director of operations and chief information security officer at Children's Hospital. "There were so many problems at night that backups were being missed."

Scheib added that IT personnel found it difficult to determine the cause of the tape problems.

To fix the snags, the hospital first tried a disk-to-disk backup system in January by launching a pilot program using virtual tape library (VTL) technology as an intermediary between its Fibre Channel storage-area network (SAN) and two tape libraries.

Going With Plan B

Scheib said his staff quickly determined that the pilot was not working as hoped, forcing the hospital to try something else. "We had a lot of trouble getting [the pilot system] configured correctly," he said, noting that it required that the Fibre Channel SAN be integrated with the VTM technology from Melville, N.Y.-based FalconStor Software Inc.

The hospital changed paths in June, installing a disk-to-disk backup system using DD460 disk arrays from Data Domain Inc. in Palo Alto, Calif. The new backup system runs on an Ethernet network that doesn't include the Fibre Channel SAN.

The DD460 arrays cost about $75,000 apiece, Data Domain said.

Scheib said the new disk arrays doubled data transfer rates, cutting three hours from the hospital's daily backup window, cutting failures in half and accelerating restores from hours or days to minutes.

The disk-based backup technology lets the hospital keep about three months of backup data online, nearly eliminating off-site tape recalls for data restores, Scheib said. The response time for urgent restore requests has been reduced from four hours to a few minutes, and the new system enabled the hospital to eliminate one of its Hewlett-Packard Co. tape libraries, he noted.

> **"The backup window just kept growing and growing. There were so many problems at night that backups were being missed."**
>
> **PAUL SCHEIB**, DIRECTOR OF OPERATIONS AND CHIEF INFORMATION SECURITY OFFICER, CHILDREN'S HOSPITAL

Scheib said he backs up about 60TB a week to his three DD460 disk arrays using Symantec Corp.'s Veritas NetBackup 4.5 software.

So far, the new system has worked flawlessly, he said.

Tony Asaro, an analyst at Enterprise Strategy Group Inc. in Milford, Mass., said he was surprised that the pilot VTL system didn't work out for the hospital, because such systems are relatively easy to install and usually run well.

Asaro did say that networks incorporating Fibre Channel SANs can be harder to configure and that VTL technology can be more difficult to use than Ethernet-based disk-to-disk technologies.

Overall, disk-to-disk technology is not without its drawbacks, according to some analysts and users.

Jerome Wendt, a senior information systems analyst at a large Midwest data-processing firm, has experienced problems integrating some traditional backup software with disk-to-disk backup technology.

"I know there are issues with [IBM's] Tivoli Storage Manager, where it doesn't recognize every virtual tape library interface presented to it," Wendt said.

Scheib said that he hasn't yet run into any issues with his Data Domain technology and plans on further reducing his dependency on tape. **57996**

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BRIEFS

Mercury Execs Resign in Scandal

Three Mercury Interactive Corp. executives – CEO Amnon Landan, Chief Financial Officer Douglas Smith and General Counsel Susan Skaer – have resigned after an internal probe into stock-option grants resulted in a scathing report on their accounting oversight. President and Chief Operating Officer Tony Zingale was named CEO, replacing Landan, who joined the firm in 1989 and became CEO in 1997.

Nortel Blames Q3 Loss on Penalty . . .

Nortel Networks Corp., citing restructuring costs and a penalty stemming from a refiling of its tax returns, reported a loss for its latest fiscal period.

NORTEL BY THE NUMBERS

	REVENUE	
Q3 '05	$2.7B	($105M)
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New Nortel CEO Mike Zafirovski has agreed to repay $11.5 million of separation money to former employer Motorola Inc. to settle a lawsuit filed last month after Nortel announced his hiring. Nortel will reimburse Zafirovski for the payment. He also agreed not to recruit Motorola employees. Motorola had sought to prevent Zafirovski from working at Nortel for two years and block him from hiring its employees.

Investors Sell Agilent Business

Chip developer PMC-Sierra Inc. has agreed to buy the storage semiconductor business formerly owned by Agilent Technologies Inc. for about $425 million. PMC-Sierra is acquiring the business from investment firms Kohlberg Kravis Roberts & Co. and Silver Lake Partners, which bought Agilent's chip business in August.

Microsoft CRM Upgrade To Ship Ahead of Schedule

Users hope new product addresses v1.2 shortcomings

BY MARC L. SONGINI

MICROSOFT CORP last week said its long-awaited CRM 3.0 upgrade will ship early next month, weeks earlier than planned. The product was originally slated to ship during the first quarter of 2006.

Microsoft said the release adds a number of features to its predecessor, Version 1.2, including the ability to be customized without extensive programming and stronger integration with the Outlook personal information manager.

In July, the company had disclosed that the hosted CRM 3.0 version would be sold using a subscription-based pricing format, which potentially minimizes the risks in deploying CRM, according to Microsoft.

Users interviewed last week said they hope the new release can address the shortcomings of Version 1.2.

Michael Kruger, information systems manager at Designer Doors Inc. in River Falls, Wis., said he plans to give CRM 3.0 "a long and critical evaluation" in hopes that it corrects some of the deficiencies in Version 1.2. Designer Doors currently runs CRM 1.2 for limited functions to support customer service operations, he said.

Kruger said the evaluation process will begin next month and will likely last at least three months. "We are hoping to get from 3.0 what was promised with 1.0 — a collaborative sales tool that ties together our sales force with our customer service and allows all customer information to reside in one searchable location," he said.

Because of glitches in synchronizing data in mobile systems in CRM 1.0 and 1.2, Designer Doors removed the application from the desktops of its sales force. Those workers now use Outlook to support the sales process.

Bernard McMahon, chairman of Sheffield, England-based venture capital and business services provider Just Good Business, said his company uses Microsoft's CRM software both internally and to assist clients.

"We'll be using the new version as soon as possible. I'm already recommending it to all the companies we work with," McMahon said via e-mail.

Darryl Nitke, CIO at Cosa Instrument Corp., also plans to move to 3.0 as soon as possible to take advantage of its integration with Outlook. His Yaphank, N.Y.-based company, which distributes sensors, meters and industrial controls, runs CRM 1.2.

Nitke said he isn't interested in the subscription licensing changes from Microsoft because "the hosted model wasn't that great for us." Cosa moved from a bosted Salesforce.com Inc. CRM system to the Microsoft software because the hosted system lacked integration with Cosa's accounting and e-mail applications and had limited reporting and customization capabilities, Nitke said.

Liz Herbert, an analyst at Forrester Research Inc., said CRM 3.0 includes significant enhancements, including new or improved marketing and customer service capabilities and the ability to create role-based user interfaces. 58000

AT A GLANCE

Microsoft CRM 3.0

- Follow-on to CRM 1.2
- To be available as a service via subscription
- Tight integration with Office
- Customizable without recoding
- Ships in early December

Microsoft Exec Weighs In on CRM 3.0

Brad Wilson, general manager of Microsoft's CRM unit, talked to *Computerworld*'s Marc L. Songini about the release of the company's long-awaited CRM 3.0 software, which it said last week will ship in early December, a few months earlier than expected. Wilson also explained why Microsoft jumped from Version 1.2 to 3.0, and he provided some details on the size of the company's CRM business.

Why did you push up shipments of CRM 3.0 from early next year to early next month? We had said we'd finish sometime in the first quarter of 2006. We finished coding back in May, and we just finished testing and everything else [last] Monday.

Microsoft's CRM software proceeded from Version 1.2 to 3.0. What happened to Version 2.0? We had initially planned to release 2.0 in the spring of this year. But [our] partners and customers said, "This is a good release, but it could be a game-changing release if you went back and did some additional work." We decided to put some more time in the development cycle and add some customer platform flexibility to make it easier to develop customized and vertical applications around CRM.

What are some of the features added after deciding to cancel Version 2.0? [Version 3.0] has the ability to add new objects with no coding, and it's fully upgradable and portable.

How did you accomplish this? Microsoft CRM is a very modern application, built in the last four to five years with a Web services architecture. You can automatically generate a new object and make that object live and work in the system. Before, it would have required a lot more coding to create customer objects.

How big is Microsoft's CRM business? We grew 100% last year and [foresee] a fast growth rate going forward. We have five and a half thousand customers now, with 150,000 [end] users.

How does the activity in the CRM business – Oracle's move to buy Siebel and sell its On-Demand offering, and the continued growth of companies like Salesforce.com – affect Microsoft's hosted CRM plans? It's not really affecting us. For hosting, we're bringing in subscription-based pricing through a partner network. Previously, somebody had to buy the license – either the partner or customer.

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How does CRM 3.0 work with Outlook? We're going way beyond Outlook integration. We're offering a native Outlook experience, and many people will have no idea where Outlook stops and CRM starts. Expect us to integrate closely all the [business] applications over time.

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Compliance = ROI

See beyond compliance es e burdan, a diversion of cepitel, a drein on your productiva assets. How you respond to reguletion can ectually anhence your businass procasses and IT operations. With IT management softwere from CA, you eutomata controls ovar business process and policy. Enhance tha flow and security of information. And sustein productivity of your systams and peopla at highar levals. Over 95 percent of the Global 1000 rely on CA software. Learn what tha return on compliance can amount to for your businass at **ca.com/compliance**. Or call **1-800-225-5224**, promo coda **1725**.

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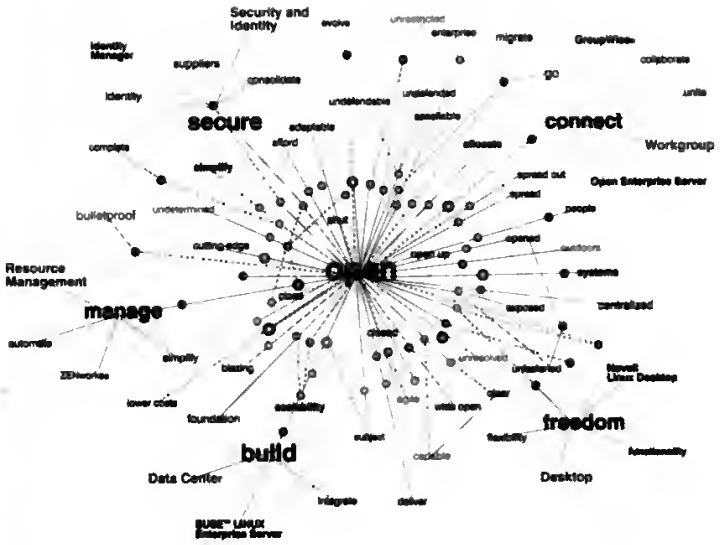

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GLOBAL

An International IT News Digest

Telefónica to Buy Mobile Networks Operator O2

MADRID

TELEFÓNICA SA last week said it has agreed to pay £17.7 billion ($31.4 billion) for O2 PLC, which owns mobile network operators in the U.K., Germany and Ireland as well as on the Isle of Man.

The deal ends speculation about a possible sale of Slough, England-based O2, which has been courted by several mobile services providers, including Koninklijke KPN NV in the Hague and Deutsche Telekom AG in Bonn. Both of those companies declined to comment on whether they will make counteroffers for O2, which was spun out of BT Group PLC in 2001.

In a conference call, Telefónica Chairman César Alierta said that if the purchase of O2 goes through, the Madrid-based telecommunications company has no plans to make additional major acquisitions in Europe.

Telefónica said that it expects to complete the acquisition in January and that O2 will retain its existing brand name and continue to be based in the U.K.

■ JOHN BLAU, IDG NEWS SERVICE

Qualcomm Disputes Unfair Licensing Claims

BRUSSELS

QUALCOMM INC., a San Diego-based developer of chips and software for mobile communications, is challenging charges of unfair patent licensing practices that were filed in Europe late last month by a group of six mobile vendors.

In a statement issued Oct. 28, Qualcomm called the allegations "factually inaccurate and legally meritless" and vowed to vigorously defend itself. The company also contended that the complainants appear to be seeking help from European officials in renegotiating the license fees for its patents.

Nokia Corp., LM Ericsson Telephone Co., NEC Corp. and Texas Instruments Inc. are among the vendors that said they had filed complaints with the European Commission charging Qualcomm with anticompetitive behavior.

The complaints allege that Qualcomm has failed to adhere to agreements the company made when it contributed patents to the Wideband Code Division Multiple Access standard for 3G mobile networks.

■ DAN NYSTEDT, IDG NEWS SERVICE

Chinese Bank Caps Online Transactions

BAIJING

THE PEOPLE'S BANK OF CHINA, which sets that country's monetary policy and regulates parts of its banking industry, has issued a set of guidelines capping the amount that individuals can spend online at 1,000 renminbi ($123.53) per transaction.

The document, called "Guidelines for Electronic Payment (No. 1)," also limits the total amount of electronic payments that Chinese residents can make via the Internet and mobile phones on a daily basis to 5,000 renminbi ($618.62).

However, transactions that require the use of digital signatures and certificates to authenticate the identities of buyers are exempt from the limits. The central bank said the new rules are designed to reduce the possibility of online fraud. **57852**

■ SUMNER LEMON, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Vodafone Group PLC in Newbury, England, has agreed to buy a 10% stake in Bharti Tele-Ventures Ltd. in New Delhi for 66.56 billion rupees ($1.48 billion). Vodafone said that Bharti has 14.1 million mobile customers and that its fixed-line user base grew by 39% from April to September.

■ NANCY GOHRING, IDG NEWS SERVICE

Lenovo Group Ltd., citing growth in Asian markets, said its second-quarter profits totaled HK$364 million ($43.8 million), topping a consensus forecast of HK$300 million ($37.1 million) issued by Thomson One Analytics. Second-quarter revenue totaled HK$28.5 billion ($3.5 billion). The PC maker said that 35.8% of its sales were in Hong Kong, Taiwan and China.

■ SUMNER LEMON, IDG NEWS SERVICE

The Tokyo Stock Exchange was forced to halt trading last Tuesday as a result of a system glitch. The problem was discovered before the market's 9 a.m. opening, which was delayed by more than four hours. Reports blamed the problem on a software error related to an October trading system upgrade.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

Sun Taps Into StorageTek's Portfolio for 1TB Tape Drive

BY LUCAS MEARIAN

Sun Microsystems Inc. last week brought out the first fruit of its recent acquisition of Storage Technology Corp. — a high-end, 3.5-in. tape drive that can hold up to 1TB of compressed data.

The new T10000 tape drive has a throughput rate of 120MB/sec. — four times that of its predecessor, the 9940B model — and can encrypt data at the drive level. It has Fibre Channel and Ficon dual-port connectivity, Sun said.

Charles Curran, a storage consultant at the European Organization for Nuclear Research, known as CERN, said he plans to test the T10000 tape drives next year alongside IBM's competitive TS1120 1TB product, which started shipping late last month. His organization, which runs a particle physics research center in Geneva, is looking to restock its storage farm.

Curran expects that the research center will have to buy at least 200 tape drives to back up a mind-blowing 15 petabytes (15,000TB) of data annually related to particle accelerator experiments. "The bigger the cartridge, the better," said Curran, whose operation uses a StorageTek SL8500 modular tape library system. Curran said Sun has a slight throughput advantage over IBM of 120MB/sec. vs. 100MB/sec.

He said the T10000's ability to encrypt data isn't important at his site, since the lab's data will be a series of seemingly random numbers collected from experiments in which atoms are accelerated to velocities approaching the speed of light and then smashed against other atoms.

The accelerator experiments are expected to go live in 2007 once the new storage arrays are up and running.

Key Issues

CERN's StorageTek library currently houses 54 of the older 9940B tape drives with 200GB native capacity each. The new T10000 technology would increase throughput four times and increase capacity two and a half times.

While added capacity and throughput would help the research center lower the overall storage footprint in a 30-year-old data center that has little room to grow, it doesn't necessarily address CERN's biggest problem: data restore time.

"We have to try and read this data all back to try and analyze this in later years," Curran said. "We have to introduce a policy into our software whereby we just don't mount the tape until there are many requests for files from it. This is a serious change for our users. They'll have to discipline themselves."

Scientists at CERN intend to read back all 15 petabytes of data up to twice a year in order to perform number-crunching analysis. Because of that, Curran is hoping to achieve high read throughput rates — up to 4GB/sec., which the new drives would be able to achieve working together.

The T10000, which has a 500GB capacity, is expected to be available this month starting at $37,000 for the Fibre Channel model and $44,000 for the Ficon model. **58002**

NEW PRODUCT

Sun T10000 Tape Drive

- Offers up to 500GB uncompressed capacity
- Supports Fibre Channel and Ficon dual-port connectivity
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Compiled by Mike Bucken.

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Vodafone Group PLC in Newbury, England, has agreed to buy a 10% stake in Bharti Tele-Ventures Ltd. in New Delhi for $676 million, approximately £390 million. [illegible] Bharti has 9.5 million mobile customers and that its fixed-line customer base grew by 30% from April to September.

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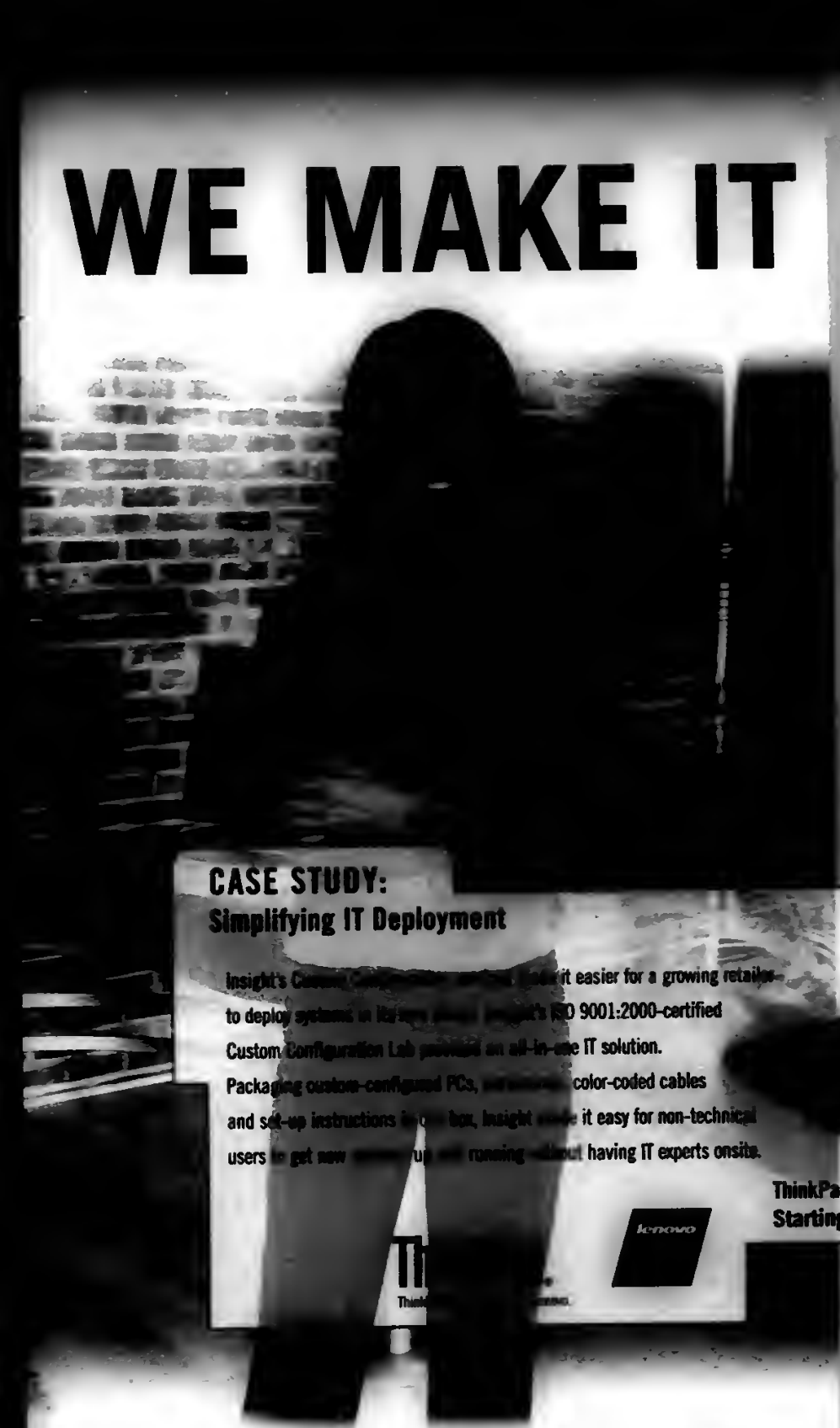
Delaying a PC upgrade may actually cost you more in the long run. Often older PCs have lower security capabilities and higher maintenance costs. If a PC refresh is on your radar, talk to Insight. We offer great values on the leading desktop and notebook PCs. Plus, we offer a broad range of services and resources – such as Custom Configuration, Advanced Integration and Asset Disposal – to simplify deployment, lower costs and manage IT assets more efficiently.



CASE STUDY:
Simplifying IT Deployment

Insight's Custom Configuration [illegible] it easier for a growing retailer to deploy systems in its [illegible] Insight's ISO 9001:2000-certified Custom Configuration Lab provided an all-in-one IT solution. Packaging custom-configured PCs, [illegible] color-coded cables and set-up instructions in one box, Insight made it easy for non-technical users to get new [illegible] up and running – without having IT experts onsite.

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Novell

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Novell's continued focus on Linux came as a relief to some customers, including Steve Hartman, director of central directory services for the state of Nebraska. The state uses 22 clustered servers running SUSE Linux for identity management purposes, and Hartman said that officials in Nebraska are "very pleased" with the software's stability and performance. But, he added, it would help Novell "if they got a little more Linux market share."

Red Hat Linux had the lion's share of Linux sales last year, controlling nearly two-thirds of the worldwide market, according to Credit Suisse First Boston. SUSE Linux, in comparison, had a market share of about 20%, the New York-based firm said.

Novell CEO Jack Messman had said as far back as August that cost reductions were in the works, after the company reported year-over-year declines in both revenue and profits for its third quarter. The layoffs, which are due to be completed by the end of January, will reduce Novell's 5,800-person workforce by more than 10%. The move is expected to reduce annual expenses by over $110 million.

The cuts are part of a wider restructuring designed to focus Novell's product development and consulting resources on areas such as Linux and open-source technology, as well as identity and resource management software.

Also last week, Novell named Ron Hovsepian president and chief operating officer and gave him direct responsibility for product development, marketing, sales and services. Hovsepian, 44, is a former IBM executive who joined Novell in June 2003. He had been head of global sales and services since last May. The No. 2 slot that he is filling at Novell had been vacant since former Vice Chairman Chris Stone left the company last November.

"Novell did need to do something at the leadership level," said Gartner Inc. analyst John Enck. "There's been quite an absence since Chris Stone left."

"Hovsepian has overseen results in the North American sales force, and with Messman getting older, it will be good for Novell to have somebody as good as Hovsepian in place," said James Taylor, president of The East Cobb Group Inc., a Marietta, Ga.-based integrator of Novell products. **58027**

Continued from page 1

Security

Newton, Mass., said a survey of 71 retailers conducted by the firm last summer showed that companies are increasingly associating demographic information and transaction-level data with customer profiles.

Kilcourse said that while many retailers have assigned responsibility for ensuring the security and integrity of that data, the information often isn't encrypted, and queries aren't well controlled. Similarly, companies aren't always capturing forensic data about the creation of customer information and its retrieval by end users, added Kilcourse, whose firm organized last week's Retail Data Security Forum.

Demand for ROI

Within information security organizations, there's a broad understanding of what needs to be done to fix such issues, said the IT security director at a major franchise chain based in the Midwest.

"The problem is the executive sponsorship," said the security director, who requested anonymity. Although the series of high-profile data compromises that have come to light this year have raised overall awareness of the stakes involved, there still is an unwillingness to invest in security projects "without a clear, demonstrable ROI," he said.

Even so, retailers overall have done a relatively decent job of protecting consumer data, said Bob Belair, a partner at Washington-based law firm Oldaker, Biden & Belair LLP. Going forward, the key is for companies to be able to prove that they have invested an appropriate amount of time and resources in securing their data, he said.

That means having a formal information security plan spelling out protections that are commensurate with the sensitivity of the data at risk, according to Belair. He advised that such a plan also has to be dynamic so companies can respond to changing security threats. In addition, it should include processes for periodic security reviews and audits, and for training workers who handle consumer data, he said.

"If you do all these things and a hacker still breaks in, chances are you aren't liable, because you've acted in a reasonable manner that met the relevant metrics," Belair said.

The director of information security at a California-based specialty retailer with about 400 stores said that distinguishing between sensitive information that's covered by regulatory requirements and confidential data, such as information about intellectual property, is critical to the process of identifying the key data assets that need to be protected.

The security director, who asked not to be identified, said his company is working to encrypt all of the regulated data on its networks via a system that's based on public-key infrastructure technology.

Michele DeMaree, president of DeMaree Consulting Inc. in Colorado Springs, said it's also important to form cross-functional teams, develop a process for assessing risks by measuring the frequency of policy violations against customer data and other information, and educate business managers about the risks to their data. **58004**

Retail Data

Of 71 retailers surveyed by Retail Systems Alert Group last summer:

ABOUT 60% said they are collecting and using consumer-specific data.

ABOUT 50% said they have linked point-of-sale transaction data to customer profiles.

ABOUT 50% have assigned responsibility for customer data to a security program coordinator.

LESS THAN 50% have a formal incident response plan for consumer data security breaches.

Open-source Use Is Slowing, Exec Says

ALTHOUGH NOVELL views Linux as a key growth business, Ron Hovsepian, the company's new president and chief operating officer, last week acknowledged that the adoption of open-source technology in data centers is slowing rather than accelerating.

"There's a wait-and-see attitude from customers," Hovsepian said during a speech at the Open Source Business Conference in Newton, Mass., agreeing with similar comments from industry analysts.

Hovsepian says Novell has observed a wait-and-see attitude toward open-source.

Hovsepian, who spoke before Novell announced its layoff and restructuring plans, said that vendors are holding back open-source software and need to package it better and provide users with migration tools.

"Right now, [a company's IT department] has to be the systems integrator and is responsible for articulating the value back to the business," he said. "The customer is having to do too much."

Hovsepian noted that Novell has increased the number of packaged applications supported by SUSE Linux to more than 1,000, up from 42 when it bought the operating system in January 2004. But he also stressed the importance of "driving open-source where it is needed and not trying to force-fit it" into user sites.

Rowdy Van Cleave, vice president of network operations at a financial services firm in the San Francisco area, said his company is testing SUSE Linux to see if it can handle myriad financial applications. With so many custom applications in large companies like his, help from vendors is needed to make a shift to Linux feasible, added Van Cleave, who asked that his employer not be identified.

In an interview after his speech, Hovsepian said Novell doesn't plan to sell off either its GroupWise collaboration software or ZENworks resource management products.

But Gartner analyst John Enck said the move to focus internal resources on a smaller number of technologies raises questions about how much the company will invest in products such as GroupWise and NetWare.

Enck said Novell officials told him last week that they remain committed to NetWare, which has long been the company's flagship product. But he advised NetWare kernel users to be prepared to move within five years to Open Enterprise Server, which also runs the stack of NetWare computing services on Linux.

According to Enck, Novell officials also told him that there will be at least two more versions of GroupWise and that technical support will continue on the collaboration technology for 10 more years.

– Matt Hamblen, with Chinta Martens of the IDG News Service

Continued from page 1

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SDLT 600 Results :

Taste :	☐	**Speed :**	☑	**Manageability :**	☑
High Capacity :	☑	**WORM :**	☑	**Compatibility :**	☑

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DLT

InfoWorld

In a blind taste test, the SDLT 600 was found to be less than appetizing. Test subjects' comments included, "if there is a hell, this is the food." Scientists have agreed to conduct the next round with condiments. As for data backup abilities, it passed with ease. The SDLT 600 has more capacity and more speed than LTO-2 and AIT-3. It also includes DLTSage™ diagnostic management software and DLT*ice*™ archival WORM functionality. How do we know? It's been tested. For more info and to see the whitepaper, visit DLTtape.com.

Windfield built Blackmagic has
expansion built in

intel

DON TENNANT

Opium Wars

TALK ABOUT some vivid flashbacks. As I was reading this week's "China Syndrome" cover story on the global problem of counterfeit hardware and software products, I was transported back a decade to when I was working for the Hong Kong edition of *Computerworld*. On a July afternoon in 1995, I did something that, in hindsight, was pretty stupid.

I decided to do a photographic exposé on the Golden Arcade, the notorious basement-level maze of shops and stalls in the Shamshuipo district of Hong Kong that was widely known as the heart of the region's counterfeit software industry. For around $5 to $10, you could buy just about any piece of software imaginable, from operating systems to relational databases to video games. And more often than not, the pirated version of any given U.S. software product was available in the arcade before the legitimate version was officially launched in Hong Kong.

Taking photographs in the Golden Arcade was risky. There were signs posted everywhere showing a camera with a big X over it, with written warnings that photography was strictly prohibited. It was no secret that Hong Kong's triads — organized criminal elements — were heavily involved in the piracy trade, so the signs carried some serious clout.

It was hardly surprising, then, that I raised a ruckus when, once inside, I began snapping photographs. People were shouting, and a Westerner who was paying for his illegal wares scowled at me. "That'll get you into real trouble," he said. "Very trouble," a shopkeeper echoed in broken, but effective, English. I ignored them, took a few more photographs and left without incident.

My aim was to show readers around the world, in a way that words really couldn't, how brazen and institutionalized software piracy was in Hong Kong. But words are the only tool I have to convey *why* that was the case.

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DON TENNANT

Opium Wars

TALK ABOUT some vivid flashbacks. As I was reading this week's "China Syndrome" cover story on the global problem of counterfeit hardware and software products, I was transported back a decade to when I was working for the Hong Kong edition of *Computerworld*. On a July afternoon in 1995, I did something that, in hindsight, was pretty stupid.

Don Tennant is editor in chief of Computerworld. You can contact him at don_tennant@computerworld.com.

I decided to do a photographic expose on the Golden Arcade, the notorious basement-level maze of shops and stalls in the Shamshuipo district of Hong Kong that was widely known as the heart of the region's counterfeit software industry. For around $5 to $10, you could buy just about any piece of software imaginable, from operating systems to relational databases to video games. And more often than not, the pirated version of any given U.S. software product was available in the arcade before the legitimate version was officially launched in Hong Kong.

Taking photographs in the Golden Arcade was risky. There were signs posted everywhere showing a camera with a big X over it, with written warnings that photography was strictly prohibited. It was no secret that Hong Kong's triads — organized criminal elements — were heavily involved in the piracy trade, so the signs carried some serious clout.

It was hardly surprising, then, that I raised a ruckus when, once inside, I began snapping photographs. People were shouting, and a Westerner who was paying for his illegal wares scowled at me. "That'll get you into real trouble," he said. "Very trouble," a shopkeeper echoed in broken, but effective, English. I ignored them, took a few more photographs and left without incident.

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Bruce A. Stewart is a former CEO and one-time senior vice president and director of executive services at Meta Group Inc. He is now an executive advisor in Vancouver, British Columbia. His email address is bstewart@computerworld.com.

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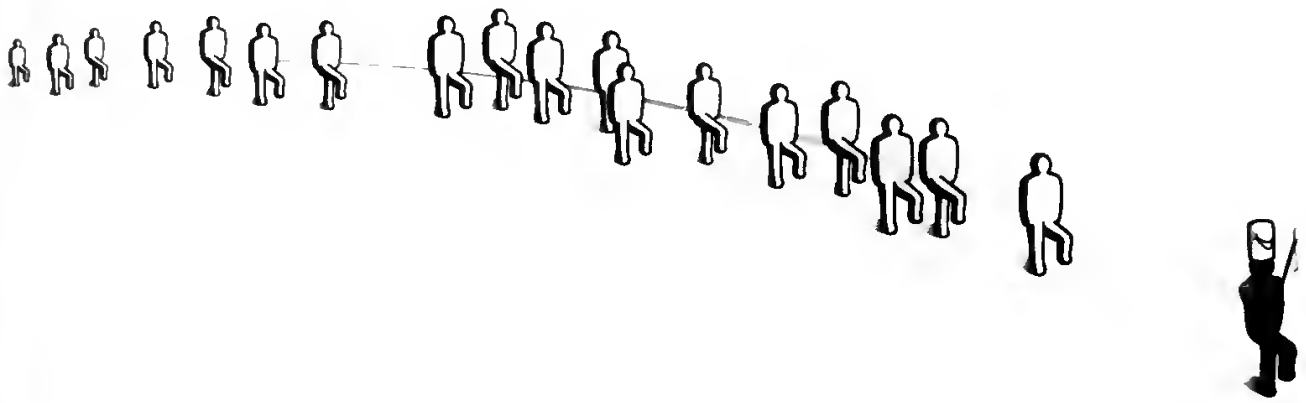

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Moving Pictures
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DIRTY DATA BLIGHTS THE BOTTOM LINE

DATA QUALITY ISN'T A GLAMOROUS TOPIC, BUT COMPANIES IGNORE IT – ESPECIALLY FOR INTERNAL SYSTEMS– AT THEIR FINANCIAL PERIL. BY KYM GILHOOLY

When Nancy Rybeck was hired by Emerson Process Management six years ago, she was charged with salvaging a data warehouse that had been built to help the company better analyze customer activity. But after a thorough review, she opted to scrap it and start over. The warehouse, it seemed, was loaded with redundant and inaccurate data.

"The biggest reason [the earlier effort] had failed was data quality," says Rybeck, data warehouse architect at Austin-based Emerson Process Management, a global supplier of measurement, analytical and monitoring instrumentation and services. One major contributor to the failure was an assumption made by the group that launched the initial Microsoft Access-based effort: that sales entities all over the world would enter customer names and addresses in the same manner, regardless of whether they operated in the Asia-Pacific region, Europe or other areas in which Emerson does business. Cultural differences, combined with complications caused by Emerson's continuing growth through acquisition, resulted in numerous ways of entering quote, billing, shipping and other key data.

Emerson's problems with inaccurate data are typical across all industries. Through 2007, at least 25% of critical data within Fortune 1,000 companies will continue to be inaccurate, according to Gartner Inc. And only 34% of executives responding to a 2004 PricewaterhouseCoopers survey said they're very confident in the quality of their corporate data.

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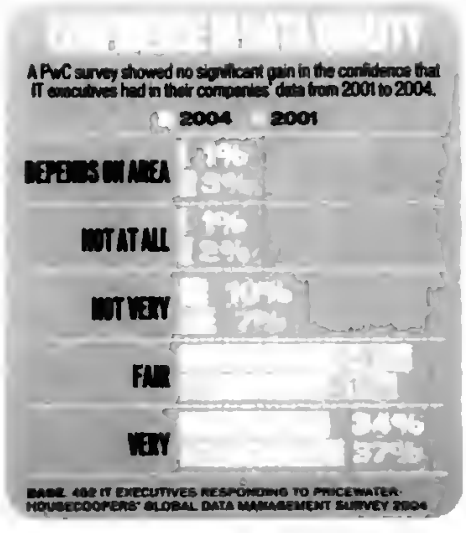
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FAIR
VERY
34%
37%
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customer-facing initiatives, the impact can be more profound on internal operations. "CRM initiatives fail, and companies get into trouble with the security and privacy of customer data," says Gartner analyst Ted Friedman. "But the big money being lost [because of poor data quality] is in internal operations."

Inaccurate financial reporting, uncollected receivables, overpayments, poor product specifications, excess inventory — the problems caused by inaccurate data are endless, and they all affect the bottom line.

Meanwhile, mounting regulatory compliance requirements dictate increased data vigilance. "You can have all the controls in place, but if your data's not accurate, your CFO will be signing off on inaccurate information," says Robert Lerner, an analyst at Current Analysis Inc.

Data quality initiatives have long languished in the shadow of sexier projects. But thanks to failed CRM and ERP efforts, compliance violations, costly supply chain inefficiencies and more, that's starting to change. Investments in data quality suites are growing at a rate between 12% and 15% annually, according to Gartner, and the market is starting to consolidate as it matures.

Protect Your Source

Tools that address data quality fall into a variety of categories, including data profiling software, which sifts data fields for duplication, missing information and other errors; data cleansing and matching tools, which parse data into discrete elements, clean it, standardize it in formats, and match and merge records; data enhancement tools, which enrich data by incorporating, for instance, third-party elements; and data monitoring tools, which ensure that data maintains a preset level of quality.

Some IT groups still rely on extract, transform and load functions to ready data from various applications for staging in warehouses, but experts say ETL's effectiveness is only as good as the data being transformed.

"ETL isn't the same thing as data quality; [the process] may have nothing to do with data cleanup," says Chad Wright, applications manager for business intelligence and CRM at Tewksbury, Mass.-based Avid Technology Inc. The provider of digital media creation products purchased tools from Firstlogic Inc. in 2001 as part of an effort to clean and match data between its new SAP CRM system and its legacy Onyx CRM system. (In September, Pitney Bowes Inc. announced its intention to acquire Firstlogic.)

Avid continues to use Firstlogic tools to validate customer master data from companies it acquires against its SAP masters to prevent duplication. It's also performing some data quality measures in real time: The IT group has developed a Web service that takes advantage of Firstlogic's IQ8 service-oriented architecture (SOA) to automatically capture shipping information and validate it against country-specific postal codes, accepting or correcting it at the point of contact. Avid is also running the vendor's Global Data Quality Connector for SAP, which allows real-time checks in the SAP environment during order processing.

"We saw benefit from doing real-time data quality functions, cleaning up the thousands of marketing leads that come into our systems every day," says Wright.

Emerson has adopted data quality tools from Landham, Md.-based Group 1 Software Inc., a Pitney Bowes subsidiary, to help profile, cleanse and merge records for its data warehouse. Given Emerson's global scope and acquisition strategy, cleaning data manually wasn't an option, says Rybeck.

Emerson's data warehouse is fed by numerous source systems from around the world. Contact information for quoting, billing and shipping is linked to associated transactional records. Duplicate records are then eliminated, and the data is merged using Group 1 tools, custom coding and manual review processes. Ultimately, says Rybeck, Emerson wants full use of its contact data to better anticipate customer needs and improve its service and marketing.

"The plan is to have this feedback loop be complete. In the past, we may have used the marketing information to get some business, but we've never followed through to see what the profitability was in a marketing campaign," says Rybeck.

Keeping It Clean

Since adopting data quality tools from Billerica, Mass.-based Trillium Software, printer manufacturer Oki Printing Solutions has been able to improve its marketing campaigns. It has also significantly reduced fees and fines in its distribution chain associated with bad contact information, says senior systems analyst Maggie Dominguez. Mount Laurel, N.J.-based Oki started using Trillium in 1999 to clean data it was moving from legacy systems to SAP and now uses it for handling consumer and end-user contact data.

Dominguez and her team started building a data warehouse less than a year ago to improve the company's analysis capabilities for functions such as sales projections. "We wouldn't have survived without the data quality tools," she says. "We would have ended up with huge quantities of data that would have been very hard to mine."

Although businesses would like to address their data quality problems once and be done, maintaining accurate data is an intensive, ongoing effort. A master customer file may be completely accurate on Friday evening but house numerous inaccuracies by Monday morning, without any interference. That's because data decays by itself: People are born and die, and they change names and addresses; companies go out of business or get snapped up. Further, there are many points of entry to enterprise data sources, and data is continually repurposed.

Key to maintaining data cleanliness is controlling who touches it, says Jeffrey Monica, manager for data quality at StorageTek, a subsidiary of Sun Microsystems Inc. StorageTek has been using tools from DataFlux Corp., a SAS Institute Inc. subsidiary, to cleanse data from more than 60 source systems worldwide for a customer data warehouse. "We want to give people the flexibility to use [the warehouse and associated marts], but we'll have control over the quality of the data so we can say we have a single version of the truth," Monica says.

StorageTek uses Informatica Corp.'s ETL tool to pull data from specific fields for data warehouse loading. It uses DataFlux tools to identify the most accurate record and to cleanse and standardize data. Though Monica says StorageTek still has significant data duplication, the company has thus far reduced 1 million records in its warehouse to around 200,000.

StorageTek began the warehouse effort three years ago but didn't buy data quality tools until a year ago, says Monica. "The good news is we recognized we needed them, but the bad news is we didn't do it on Day One," he says.

Others are recognizing the need as well, and deployments will be improved only by increased integration between data quality tools and enterprise applications, support for Web services through SOA approaches, and processes for continuous data quality monitoring, say experts.

"If you're processing large amounts of data, you need data quality tools so you can do standardization, validation, cleansing and duplicate-checking," says Avid's Wright. Then, he says, you can start attacking the problem at the source, ensuring that new data entering the system is clean. **57760**

Gilhooly is a freelance writer in Falmouth, Maine. You can reach her at kymg@maine.rr.com.

MATCH

BURDENSOME as compliance mandates may be, they've made the business case for data quality tools within some organizations. Matching capabilities are a component of what data quality tools offer, and they're particularly useful when businesses need to ensure that they're in compliance with, say, the Treasury Department's Office of Foreign Assets Control's (OFAC) list of Specially Designated Nationals (SDN), a list of terrorists, drug traffickers and similar unsavories. Financial services and insurance firms must continually check to ensure that customers or potential customers aren't on the list.

And these suspect lists "are a mess," according to analyst Robert Lerner at Current Analysis. There's no schedule for their release because they're updated as needed, and they're primarily in ASCII format.

American Education Services (AES), which manages more than $43 billion in assets through its servicing, guaranty and financial aid processing systems, is using Pittsburgh-based Innovative Systems Inc.'s i/Lytics Secure to check its various loan servicing and guaranty databases against the OFAC list. According to Diane Freundel, assistant vice president at the Harrisburg, Pa.-based agency, AES runs the program every time it runs an origination database batch, which could be several times daily, as well as at preset times for other databases.

When OFAC releases an update of the SDN list, AES receives a cleansed version from Innovative as an FTP file. If the system finds a suspicious person, execs receive an e-mail that directs them to a report. "Otherwise we'd have to manually look up every person that we're originating a loan for," says Freundel.

Though i/Lytics has default business rules for matching criteria, AES opted to set thresholds lower. That means it gets a higher rate of false positives, requiring more manual rechecks. The software also allows the company to put people who've passed previous checks on a "safe list" so they don't have to be rechecked unless pertinent personal data or the list changes.

– Kym Gilhooly

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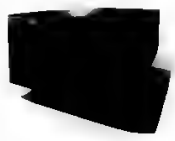

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Moving Pictures

The technology for mobile video is in place, and it's poised to take off in some industries — but wide adoption is a ways off.

By Matt Hamblen

CONSUMERS in the U.S. enjoy video clips and even receive live TV broadcasts on their wireless phones and other handheld devices. Teenagers in Japan chat with their friends using wireless videoconferencing over their cell phones. With such innovations, some IT executives in the U.S. look forward to a time when they can transmit video content or even conduct videoconferencing over handheld devices for business purposes.

"I think the most innovative and aggressive health centers are on the brink" of mobile video applications, says John Wade, CIO at Saint Luke's Health System Inc. in Kansas City, Mo., noting that many hospitals are already expanding wireless LANs and getting more physicians to carry mobile technology. "I'd be surprised if mobile video wasn't leading-edge technology in 24 months."

The allure of a Dick Tracy two-way wristwatch with video capability is alive for some potential users, but the reality may still be years off, according to IT executives and analysts.

CIOs envision a range of applications, mainly in health care and service industries. For example, a mechanic working deep inside a ship or plane could be wearing a wireless heads-up display — a device like a visor that's equipped with a video screen — that receives an audio or video tutorial on a part he is trying to install. The needed information would be right in front of the mechanic, rather than back at a desktop. Or, a service worker fixing a home washing machine could consult a Web site with numbers and pictures of parts, perhaps to watch an animation of how a part works or to check with his boss via a real-time videoconference.

At Maytag Corp., videoconferencing over handhelds would be "tremendous" help in transmitting technical drawings and other visual information to and improving communications among more than 800 field-service technicians, says CIO Ernie Park.

And in health care, the process of consulting a medical expert in another city could be improved by the transmission of charts and other data over a wireless video link that also enhances

Take a Look at This

VIDEO MOBILE applications are already emerging in workplaces such as FastFollow Technologies Inc. in Redwood City, Calif.

More than 250 sales representatives from the medical technology company have been using Palm Inc.'s Treo 600 and 650 handheld smart phones for nearly two years to play animation clips showing their main product at work.

The two-minute clip resides on a memory card inserted in the device, which is easy for sales reps to pull out quickly to show a doctor who is in a hurry and might not wait for a laptop to be booted to play the clip, says Marwan Leong, help desk supervisor at FastFollow. "It's much faster than pulling out a laptop – taking a few seconds for Treo versus two minutes for the laptop," he estimates.

FastFollow makes a federally approved medical device called the Silverhawk Plaque Excision System that helps doctors remove arterial plaque mainly from the legs of patients. It uses a tiny rotating blade to shave away plaque from inside the artery.

The purpose of the two-minute animation and two other videos is to quickly show medical personnel how the device works, Leong says. Doctors could watch the videos on the FastFollow Web site but might never get a chance. The videos can also be shown to patients about to undergo the procedure – and that process is simpler with a handheld than it is with a laptop, he says.

While the video is shown with a manual synchronization, the reps also use the Treo wirelessly with Good Technology serving as the e-mail provider.

Several times, sales reps have been in hospital rooms to watch a procedure and have e-mailed their colleagues for advice when a minor complication with the medical device arose. They have gotten quick responses, and the e-mail to the handheld has played an important role, Leong notes.

Leong wouldn't say the Treos have been exactly revision-critical for FastFollow, but he did say, "If a Treo goes down in the field, we find out about it within minutes."

In the future, reps could even use a camera on the Treo to record a procedure and transmit it, he says.

Despite the small size of the Treo, the 650 has "quite good video clarity" with resolution of 280 by 320 pixels. "You can see it and hear it," he says. In other words, it has practical value for playing video, something that could be eventually used in a wireless network.

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the communication by transmitting the faces of participants, adds Wade.

Although diagnosing a patient over a tiny video device might sound farfetched today, it could eventually be an extension of what's already happening between doctors and patients using larger videoconferencing monitors over wired networks at the University of Texas Medical Branch (UTMB).

Mobile videoconferencing could be useful in some clinical areas, including mental health intervention, or for diagnosing conditions such as skin disorders, says Glenn Hammack, assistant vice president and executive director at UTMB in Galveston.

Advances and Barriers

Technology will advance in the next two to five years to greatly expand wireless bandwidth and improve video resolution on the screens of small devices, areas that hold back some effective video communications today, says John Stehman, an analyst at Robert Frances Group Inc. in Westport, Conn.

But some of the technologies necessary to support wireless video may lag for much longer. Take batteries, for example. Today, a long video clip running on a cell phone can drain the phone's battery, says Jeffrey McDowell, a director of independent software vendor alliances at Research In Motion Ltd. (RIM) in Waterloo, Ontario. For the immediate future, RIM is concentrating on support for its traditional customers' needs for reliable and secure data, not video, he adds.

One RIM partner, Mirifex Systems LLC in Strongsville, Ohio, which builds mobile business applications, is counting on customers continuing to ask for the basics in their applications, such as secure e-mail, says CEO Bill Nemeth.

Meanwhile, Chris McGugan, senior director for wireless product management at Symbol Technologies Inc., says "there are some markets where video on mobile could work," but he describes it as an application that won't be commonplace until fairly far into the future. And Rick Osterloh, vice president of products at Good Technology Inc., a RIM competitor, calls video on mobile devices an emerging technology.

Most of the wireless carriers in the U.S. are aggressively marketing video clips and animations to consumer users, but interest in mobile videoconferencing seems limited to Asian countries so far.

"I'm not really hearing much about mobile video for business uses from service providers or vendors," says Stehman at Robert Frances Group. "Certainly verticals such as medical and construction will see it, but it's predicated on when we get next-generation networks and enough cell sites, and that's not going to be until after 2006." Stehman says IT executives can make long-term plans to decide which applications might be desirable once mobile video technology becomes more feasible.

The Comfort Factor

Video mobile technology advancements won't play as big a role in the planning process as the comfort level of users, warns Saint Luke's Wade. "It will truly be up to those innovative doctors and nurses who value access to information more than complying with 'the way we've always done it' mentality," he adds.

Allen Nogee, an analyst at In-Stat in Scottsdale, Ariz., also believes the user acceptance of mobile video and videoconference will be vital. Based on his observations of teenage users in Japan, he says, videoconferencing over a cell phone today is ergonomically difficult. "If you hold the phone with a camera, you have to point it at yourself so you frame yourself, but you might only be guessing, and then it might be too far away to pick up your voice," he says. To accommodate the awkwardness of videoconferencing, some phones have two cameras, each pointing in opposite directions, with one designed to show what the camera person is seeing, he adds.

Nogee says the value of certain visual mobile applications is clear. For example, a realtor could send still photos of a home from a cell phone — but that doesn't take advantage of moving pictures at all, he adds. But Nogee questions the value of videoconferencing with a small device, given the ergonomics involved. "Certainly, a lot of businesses will have video mobile applications in five years in the U.S., and the technology is not the stumbling block," he says. "The question is whether people will want to do it."

A recent survey from In-Stat shows that one in eight consumers today is interested in purchasing mobile video services from a wireless provider. That's enough for the technology to generate significant revenue for carriers, says In-Stat analyst David Chamberlain. The number of consumers purchasing mobile video content will reach 1.1 million this year in the U.S., and it will grow to more than 30 million in 2010, In-Stat forecasts.

Carriers such as Sprint Nextel Corp. are making a big push to capture the teen market. Sprint Nextel, for example, offers a service called Varsity Mobile, which features first-run shows and viewer interactivity. Carriers and analysts note that this very group of 13-to-18-year-old consumers will eventually grow up and take jobs where they'll be challenging IT staffs to look for work-related mobile video applications. **ID 57255**

VIDEO OVER MOBILE in a business setting is unquestionably cool, but users elsewhere have raised questions about how useful it will be.

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"You have the carriers hyping their new high-speed networks, and videoconferencing is an easy answer for what will be used, but I don't necessarily think it will be really used," Nogee says. He notes that specialized industries, including medicine, will find uses for training and information-sharing that can't be handled easily with still images. "In certain verticals, video over mobile will be very important and refined," Nogee says, "but they won't make up a large part of overall business."

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ON THE CONTRARY

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– *Matt Hamblen*

Can you understand me now?

Voice technologies now in the labs mean the answer will be yes.

By Linda Rosencrance

EVERY FEW YEARS, researchers say that automated voice recognition technology has finally arrived, but it seems as though the reality never lives up to the hype.

For the past two decades, systems that enable touch-tone responses to automated voice prompts have been used by businesses for telephone-based routing and self-service. But today, a large number of businesses are investing in newer two-way interactive voice response (IVR) to move beyond the limitations of touch-tone.

Datamonitor PLC, a market research firm in New York, says the next five years will see widespread deployment of IVR across companies, and the applications of speech recognition will grow in complexity and sophistication.

In particular, says Datamonitor analyst Daniel Hong, "in the next five years, the market will witness several large voice-authentication deployments, primarily in the financial services market, because of the increasing need for security and a proliferation of PIN/password-reset applications."

One company that offers such an application today is Nuance Communications Inc. in Menlo Park, Calif. Here's how Nuance's system works: A caller spends a few moments "enrolling" his voice, creating a "voiceprint." Then, when calling the application at a later time, his voice is compared with the voiceprint on file. If there's a match, the caller is validated.

In the next five years, there will also be a tighter integration between speech engines and speech applications, which tend to be separate pieces of software today, says Jim Blake, a senior software engineer at San Diego-based LumenVox LLC.

That will improve the accuracy of speech engines by enabling them to get clues about users and applications when they are stumped, he says.

FUTURE WATCH

For example, if the speech engine in an airline reservation system recognizes the cities spoken by a user but not the flight numbers, it might ask the application for a list of possible flight numbers. "This is all done in one interaction," Blake says. "Typically, if one section of the audio isn't understood well, the caller must be reprompted for the missing information. But in our example, we are making the [speech recognizer] smarter by talking with the application."

Real Conversations

Moreover, those applications will be able to handle a user's request in a more human way, says Peter Mahoney, vice president of ScanSoft Inc., a supplier of speech software in Burlington, Mass.

"Today, if you're talking to an automated system to make a flight reservation, you have to tell the system what it wants to hear in the way it wants to hear it," Mahoney says. The system will ask you where you're departing from, where you're going and the date you want to leave.

"However, in the next few years, the system will say, 'Tell me about the trip you'd like to take,' and you'll say, 'I'd like to go from Boston to New York next Thursday, and by the way, I'm traveling with two people,' " Mahoney says. "The intelligent system should be able to parse that all out, identify enough meaning from the pieces that are communicated through the person's dialogue and then ask follow-up questions.

"Most speech applications today are completely unable to deal with conversations that deviate from a very tightly specified call flow, which means that when callers do deviate from the model — and the data shows they deviate frequently — application performance and caller experience suffer," he says. "By creating and implementing much more flexible dialogue management models, next-generation products will keep more callers in the application and allow them to converse with the application in a more efficient, more natural manner."

One of the things that will drastically change in the world of voice recognition in the next several years is that vendors will provide customers with the tools necessary to easily update their voice applications, says Azita Martin, vice president of marketing at TuVox Inc., a Cupertino, Calif.-based supplier of enterprise software for speech applications.

"Today . . . the applications are hard to change," she says. "So every time companies want to update their speech applications . . . they have to call the vendor, and that's very expensive." Martin says vendors will come up with tools that have powerful graphical user interfaces so companies will be able to update their speech applications the same way they update their Web sites.

In another development, researchers at IBM are working on software that recognizes emotions in speech.

"We are working on making speech be expressive, which is to . . . create the speech output that matches the mood of the person [using an IVR system]," says David Nahamoo, a manager in human language technologies at IBM Research. "Is the person [delivering] good news, bad news, sad news or an angry message? We are trying to provide an automatic way to create any persona that a customer wants."

IBM is also working on a voice-recognition engine that can identify various accents and dialects, he says.

"We need to keep improving on the performance of all of these engines year to year, to be able to support and address the growth in expectation by users," Nahamoo says. **57440**

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Geek's

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

Space Elevator Contestants Go Down

Artist's conception of a space elevator

No one managed to win top honors in NASA's Beam Power Challenge and its Tether Challenge, competitions to develop technologies that could be used in space elevators. The two $50,000 prizes went unawarded in last month's contests in Mountain View, Calif., because none of the 10 finalists managed to meet all of NASA's qualifying criteria.

To win the Beam Power Challenge, teams had to construct robotic climbers capable of climbing up and down a 50-meter cable in under 50 seconds powered only by the light from a 10,000- watt searchlight.

In the Tether Challenge, teams had to produce high-strength, low-weight tethers. Part of the competition was a head-to-head strength test, which was won by the Centaurus Aerospace team. To win the jackpot, though, the tether had to be 50% stronger than a commercially available material. In fact, although the Centaurus team's tether managed to carry 544 kilograms before snapping, NASA's in-house tether was still stronger, registering 590 kilograms before it failed.

Both purses will roll over into next year's contest, says NASA, and the competitions will be more difficult. The teams will have to create their own power supplies for the climbing robots, and the tethers will have to be even stronger.

GROVES OF ACADEME

Researchers Find Missing Link

Scientists at The University of Manchester in England have made a major breakthrough that could hold the key to creating the first practical quantum computers.

Professor Richard Winpenny of the School of Chemistry and a team of international researchers have for the first time demonstrated how qubit (quantum bit) rings – pieces of quantum information – can be linked together.

Electron microscope image of a qubit from Hans Mooij's research group at Delft University of Technology

The research found that the qubit rings, when attached using a hydrogen bond, remain stable in a resting state. It was also found that the rings can be brought into close proximity without changing their magnetic behavior due to through-space exchange. This leads to the possibility of a switch being incorporated that uses the exchange of electrons within the bonds of molecules.

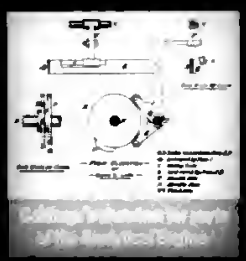
The breakthrough, which follows three years of research, opens up the possibility of being able to create quantum gates, a more advanced version of the processors found in modern computers.

"Linking these molecules not only gives us a much better understanding of how these molecules interact, but it also gives us more control over how they interact, which is essential if we are to ever successfully implement quantum gates," says Winpenny. "This is the start rather than the finish in terms of the development of a quantum computer. But now that we have shown we can do this, it gives us clear targets."

If built, quantum computers would be the most powerful computers ever made, with speeds millions of times faster than the average PC for some calculations. Those speeds would be valuable in factoring large numbers and therefore extremely useful for encrypting information. **57723**

Page compiled by Tommy Peterson.

Get With the Program



Plans for WLANs

For which of the following applications are you planning to use your wireless LAN in the next 12 months?

Employee mobility

Conference room access

Voice over WLAN

Asset tracking

Wired p[illegible]

Other

Don't
5

Geek's Garden

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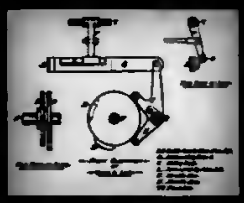
If built, quantum computers would be the most powerful computers ever made, with speeds millions of times faster than the average PC for some calculations. Those speeds would be valuable in factoring large numbers and therefore extremely useful for encrypting information. ● 577720

Page compiled by Tommy Peterson.

DIFFERENCE ENGINES



Babbage's sketches for parts of the Analytical Engine.

Congratulations Award Recipients!

Computerworld's Storage Networking World (SNW), in conjunction with the Storage Networking Industry Association (SNIA), proudly announces the results of the sixth SNW "Best Practices in Storage" Awards Program. This program honors IT user "best practice" case studies selected from a field of qualified finalists.

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Award Recipients in each of the following categories were recognized during an awards ceremony at Storage Networking World in Orlando, Florida, on October 26th:

Systems Implementation
- **Cerner Corporation, Lee's Summit, Missouri**
- **Community Health, Indianapolis, Indiana**

Honorable Mentions: *Coppin State University, Baltimore, Maryland*
Nationwide, Columbus, Ohio
Saint Luke's Health System, Lee's Summit, Missouri

Storage Reliability and Data Recovery
- **Carnegie Mellon University, Pittsburgh, Pennsylvania**
- **William Beaumont Hospitals, Royal Oak, Michigan**

Honorable Mentions: *Key Agency, Englewood, Florida*
National Instruments, Austin, Texas
Primus Telecommunications, Etobicoke, Ontario

Data Lifecycle Management
- **Palmetto Health, Columbia, South Carolina**
- **SMART Communications, Inc., Makati City, Philippines**

Honorable Mentions: *Arup, London, England*
Cancer Therapy and Research Center (CTRC), San Antonio, Texas
Pacific Life Insurance Company, Newport Beach, California

industry Reguiation Compiiance and Corporate Governance
- **Dallas Morning News, Dallas, Texas**
- **Memorial Sloan-Kettering Cancer Center, New York, New York**

Honorable Mentions: *Ferrellgas, Overland Park, Kansas*
Leesport Financial Corporation, Reading, Pennsylvania
Palmetto Health, Columbia, South Carolina

innovation and Promise
- **Baptist Memorial Health Care Corporation, Memphis, Tennessee**
- **Navy Surface Combat Systems Center, Wallops Island, Virginia**

Honorable Mentions: *AFLAC, Columbus, Georgia*
Mohawk Industries, Calhoun, Georgia
Pratt & Whitney, East Hartford, Connecticut

How to Get a Job In the Infosec Field

Lots of readers wondered where all those security jobs our manager talks about are, so she did a little research. By C.J. Kelly

MY DECISION to stay in my current job for quality-of-life reasons provoked emotional responses from several readers. Some of those who wrote to me about that column [QuickLink 57182] had made similar decisions. But a few, after reading about how I turned down multiple job offers, asked, "Where are all these jobs you keep talking about?" I felt compelled to do a little research on the information security job market and present the results here.

SECURITY MANAGER'S JOURNAL

First, I did an unscientific survey of the publicly posted jobs. In my case, most of the jobs I've had have come from personal referrals, so when I'm looking, the first thing I do is contact my network of friends and colleagues. However, I have found that searching the job boards gives me a sense of the types of jobs that are out there, who's hiring and approximate salary ranges.

I set out to answer five questions with this research:

1. How many security jobs are out there?
2. What types of security jobs are out there?
3. What requirements do employers have for certifications and degrees?
4. What parts of the country have more security jobs than others?
5. What are the salary ranges?

Whenever I'm contacted by a recruiter looking for security professionals, I point him in the direction of the International Information Systems Security Certification Consortium Inc., or (ISC)², which offers the Certified Information Systems Security Professional (CISSP) certification. When I checked its site, the (ISC)² had over 80 security job postings, many with multiple positions, for the month of October. The positions ran the gamut from salespeople to technical security engineers, executives and consultants. The companies advertising for security professionals were located all over the map, including Canada, England, Saudi Arabia and California. Eighty didn't seem like a very big number, though, so I surfed to some of the major job boards.

Each job board has its own way of making searching easier, but by searching for "CISSP" for October, I got the following results: Dice, 645 matches; HotJobs, 1,000; CareerBuilder, 713; Monster, over 800 matches.

There were plenty of job postings from the Big Four consulting houses looking for security types to do audit work, traveling 100% of the time for $40 per hour or less. For a qualified security professional, that's practically minimum wage. Working for one of the Big Four looks good on your résumé, gives you a lot of experience (primarily in IT audit) and makes you an expert in dealing with airports, hotels and rental car companies. I would exclude the big consulting companies. They charge exorbitant prices, but very little of that goes to the consultant who does the job. I also think companies would do better hiring full-time security people and internal auditors. (No offense to you Information Systems Audit and Control Association types; I am also a member!)

> You need to know what you are best at and look for jobs that match your skill set.

The biggest problem with searching was finding the right security job description for me. There's no real agreement on what constitutes a security engineer as opposed to a security analyst or a security architect. Executive positions (director level and above) aren't always posted, but those that are seem to be fairly clear about requirements.

Types of Jobs

The answer to the question about the types of jobs out there: You need to know what you are best at and look for jobs that match your skill set. There are plenty of opportunities, though many of them are ill defined. Many companies don't really know what they want and need, so you have to keep knocking on doors until you find one that swings open enthusiastically.

As for certifications and degrees, my first conclusion is that you should finish that bachelor's degree if you haven't already done so. Not too long ago, technical people were hired based on a particular skill set, not necessarily on formal education. But the trend now is toward demanding that sheepskin, and a bachelor's degree seems to be the minimum requirement for a large number of posted jobs. In many cases, a master's degree is desired. I also found that employers want degrees to be supplemented by a string of technical certifications. The bar seems to be rising.

The CISSP is a very popular and highly regarded certification, but the SANS Institute also offers an excellent certification series that's highly respected. As Linux becomes more mainstream, Red Hat certifications are growing in importance. Microsoft offers the MCSE+ security certification. And let's not forget Cisco. There are many certification programs, but these are on the short list. They are all valuable, each with a different emphasis. The trick is to find the openings that fit your certifications and skills, and just keep knocking on those doors.

In the U.S., the West and East Coasts appear to have more security jobs than other parts of the country, and they pay more — sometimes two to three times as much. Just remember that the cost of living matches those increased pay scales. I noticed that the job boards all have ways of doing area or metro searches, so with a little practice you should become fairly proficient at searching various locales for particular kinds of jobs.

As for salaries, they've been all over the map in recent years, and employers seem to be hesitant to post anything specific about them. Just remember to value yourself and your skills in advance so that when you are contacted by a prospective employer, you will be confident in your market value. Remember, it's not about the money. It's about doing what you love where you love to do it. ◗

WHAT DO YOU THINK?

This week's Journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum. QuickLink 57580

To find a complete archive of our Security Manager's Journals, go online to computerworld.com/secjournal

SECURITY LOG

Security Bookshelf

Mapping Security: The Corporate Security Sourcebook for Today's Global Economy, by Tom Patterson, with Scott Thomas Ellis (Symantec Press, 2004).

The author of this book traverses the globe through chapters devoted to specific countries and areas: the Americas, the Middle East and Africa, the Asia-Pacific region and Europe. In each part of the world, the rules are different, and it's critical to understand business and culture even if the info security measures can be used. An appendix lists national security resources by country. Reading the book and learning from the experiences of folks who have been doing cross-border security for more than two decades.

–C.J. Kelly

Proposed India Law Could Hurt BPO

Proposed amendments to India's Information Technology Act would make business process outsourcing (BPO) companies among service providers, which means they wouldn't be held liable for data theft or leaks. The legislation would hold cybercafés and network engineers liable for data theft. Cybercafés support Prime Minister Manmohan Singh's Congress Party's effort to ban "cell [illegible]" for the BPO industry in India.

Employers Increase Background Checks

[illegible] employers conducted nearly 4.4 million background checks in 2004, up 57% from 2003 and more than 240% from eight years ago, according to the ADP Employer Services Mobile Index. Of conducted records checked, 6% revealed criminal information.

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BRIEFS

Tizor Launches Auditing Appliance

■ Tizor Systems Inc. in Maynard, Mass., has unveiled a new add-in network appliance that allows companies to monitor and audit employee activities with mission-critical applications and data in real time. Designed to help protect against data theft, the Mantra Activity Auditing appliance supports Oracle, Sybase and SQL Server databases and Windows file servers. It uses real-time analytics that include behavioral fingerprinting; instant snapshots of multiple policies for security, operations and senior management; and on-demand compliance checks, said the company. Mantra, which starts at $25,000, is managed using a Web browser-based interface.

Verano Upgrades Security Appliance

■ Verano Inc. in Mansfield, Mass., has introduced Industrial Defender 2.0. The latest version of Verano's security appliance suite features enhanced security agents, customizable reporting and analysis, and increased scalability. It's geared for power transmission and distribution systems, water distribution and treatment equipment, gas and liquid pipelines, mass-transit systems and power-generation companies. Pricing for the Industrial Defender console is $10,000; the Industrial Defender Guard starts at $1,800 for network perimeter protection.

Oracle to Integrate PeopleSoft Apps

■ Oracle Corp. announced that it will integrate the Strategic Network Optimization and Production Scheduling products from the PeopleSoft Supply Chain Planning suite into its E-Business Suite 11i Advanced Planning and Scheduling application. The integrated offering is meant to improve supply chain efficiency and reduce risk. It will ship in 2006, according to Oracle.

JIAN ZHEN

Searching for Root Cause

IN A PREVIOUS COLUMN, I outlined the five steps in the problem management process: detection, identification, determination, resolution and reflection [QuickLink 56047]. I explained how new technologies will be required to help IT administrators determine the root causes of IT problems.

But how do IT administrators determine them today? One of the most critical steps is to go through the vast ocean of log data generated by the IT infrastructure, including router, switch, firewall, server, Web server and application logs. The logs contain a wealtb of informatioo, such as debugging or error data, that's not available anywhere else.

Searching through these logs is usually the most effective way for IT administrators to determine the root cause of a problem. The way it's done traditionally, however, using Grep or other Unix tools, is extremely inefficient for several reasons.

First of all, the Unix tools aren't made to perform extremely fast searches through logs. They're designed to search through files line by line, starting from the top, until some entry matches the search requirement. This can be an excruciating process because the matching entries could be buried at the end of a buge log file that may he tens of gigabytes.

Second, these tools have no concept of time. Almost all logs have time stamps and can tell IT administrators what happened at that specific moment in time. However, the Unix tools don't recognize this time stamp. Imagine that you want to searcb for only a five-minute block near the end of the day, and the log file is a day's worth of data. The Unix tools will start searching from the start of the file and will take a very long time to get to the desired five-minute block.

Third, there is no effective way to express sophisticated search commands with the tools. For example, to search for logs that have either words *login* or *logon*, but not *root* or *zhenjl*, tbe IT administrator would have to connect a set of sophisticated Unix commands together.

Finally, when the IT administrator finds the desired log entry, there's no efficient way to drill down to find out what came before or after that entry. It's extremely important to do that, since the root cause usually comes before the actual problem.

So, how can IT administrators make root-cause analysis more efficient?

The answer lies in the hottest technology in tbe IT world today: full-text indexed Boolean search. This technology is used by all search engines, including Google, Yahoo and MSN, to quickly return the desired results to users in seconds. By applying full-text indexing to all log data, IT administrators can reap the same benefit.

Indexing log data means breaking each of the log entries into tokens, or words. The location of each token is stored in a special dictionary called an index file. The creation of this index file doesn't affect the integrity of the original logs, which is a critical requirement for regulatory compliance. Special care also has to be applied to ensure that all time stamps of tokens are remembered so searches can be optimized.

Once this index file is created, IT administrators can then instantly locate tbe desired logs through Boolean searches. Such a search can consist of a single word or multiple words. These words can he connected using special Boolean operators such as AND, OR, NOT and parentheses. Wild cards such as "*" can also he applied to these words.

For example, to locate logs that match the earlier criteria, the IT administrator would simply create a Boolean searcb expression like "(login OR logon) AND NOT (root OR zhenjl)." IT admins can further restrict the result set by simply adding new conditions using Boolean operators. By addiog a time frame to the search, the log search engine will also jump to the desired time without searching through all the unnecessary logs.

Unlike the Web search engines, wbere index files are updated only periodically, the log search engines can index data in real time, usually tens of thousands of log messages per second. This real-time component gives IT administrators the fastest way to locate what they need.

Searcb technology has been applied in many ways, including Web search and desktop search. Applying it to the vast ocean of infrastructure log data will no doubt make root-cause and forensic analysis mucb easier for IT administrators. **57894**

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BRIEFS

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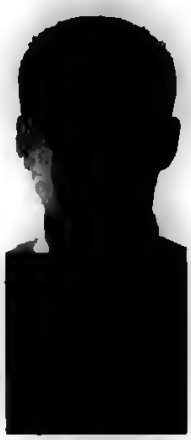

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Searching through these logs is usually the most effective way for IT administrators to determine the root cause of a problem. The way it's done traditionally, however, using Grep or other Unix tools, is extremely inefficient for several reasons.

First of all, the Unix tools aren't made to perform extremely fast searches through logs. They're designed to search through files line by line, starting from the top, until some entry matches the search requirement. This can be an excruciating process because the matching entries could be buried at the end of a huge log file that may be tens of gigabytes.

Second, these tools have no concept of time. Almost all logs have time stamps and can tell IT administrators what happened at that specific moment in time. However, the Unix tools don't recognize this time stamp. Imagine that you want to search for only a five-minute block near the end of the day, and the log file is a day's worth of data. The Unix tools will start searching from the start of the file and will take a very long time to get to the desired five-minute block.

Third, there is no effective way to express sophisticated search commands with the tools. For example, to search for logs that have either words *login* or *logon*, but not *root* or *zhenjl*, the IT administrator would have to connect a set of sophisticated Unix commands together.

Finally, when the IT administrator finds the desired log entry, there's no efficient way to drill down to find out what came before or after that entry. It's extremely important to do that, since the root cause usually comes before the actual problem.

So, how can IT administrators make root-cause analysis more efficient?

The answer lies in the hottest technology in the IT world today: full-text indexed Boolean search. This technology is used by all search engines, including Google, Yahoo and MSN, to quickly return the desired results to users in seconds. By applying full-text indexing to all log data, IT administrators can reap the same benefit.

Indexing log data means breaking each of the log entries into tokens, or words. The location of each token is stored in a special dictionary called an index file. The creation of this index file doesn't affect the integrity of the original logs, which is a critical requirement for regulatory compliance. Special care also has to be applied to ensure that all time stamps of tokens are remembered so searches can be optimized.

Once this index file is created, IT administrators can then instantly locate the desired logs through Boolean searches. Such a search can consist of a single word or multiple words. These words can be connected using special Boolean operators such as AND, OR, NOT and parentheses. Wild cards such as "*" can also be applied to these words.

For example, to locate logs that match the earlier criteria, the IT administrator would simply create a Boolean search expression like "(login OR logon) AND NOT (root OR zhenjl)." IT admins can further restrict the result set by simply adding new conditions using Boolean operators. By adding a time frame to the search, the log search engine will also jump to the desired time without searching through all the unnecessary logs.

Unlike the Web search engines, where index files are updated only periodically, the log search engines can index data in real time, usually tens of thousands of log messages per second. This real-time component gives IT administrators the fastest way to locate what they need.

Search technology has been applied in many ways, including Web search and desktop search. Applying it to the vast ocean of infrastructure log data will no doubt make root-cause and forensic analysis much easier for IT administrators. **57004**

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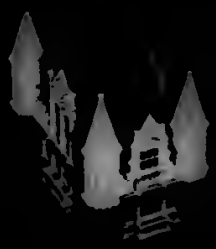

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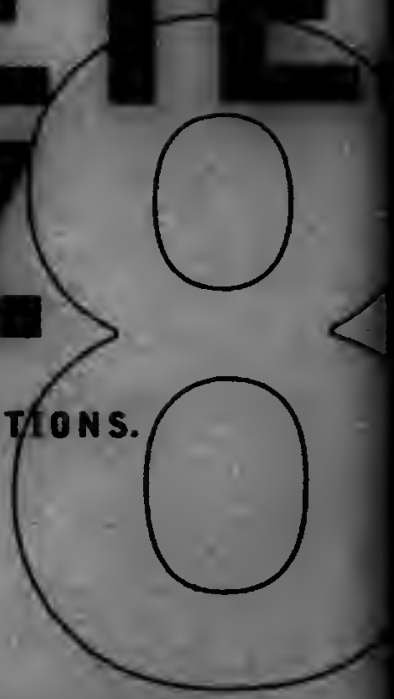

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Double Dipping on Sarb-Ox
No doubt about it: Sarbanes-Oxley compliance can be pricey. But with creativity and foresight, some companies are getting a lot more out of their compliance budgets. **Page 42**

Career Watch
A young mainframer sees infinite opportunities; the loss of tech jobs continues; and why women pursue careers in IT. **Page 46**

OPINION
You're Fired!
Firing a subordinate can be emotionally debilitating to a manager, but Paul Glen tells how you can minimize the angst. **Page 48**

Today's hottest global markets are steeped in counterfeit IT products. Here's how to minimize your company's exposure.

BY MARY K. PRATT

EDWARD MACNAMARA was impressed with the local company he had hired to help open a new office in Beijing. The vendor had offered to install a suite of Microsoft products on the computers right away.

But Macnamara's favorable view quickly turned with the vendor's follow-up question: "Do you want Microsoft today, or do you want to wait for the real thing?"

As chief technology officer at Wilmer Cutler Pickering Hale and Dorr LLP, a law firm based in Boston and Washington, Macnamara had been warned about software piracy. Still, he says, he was surprised by the vendor's brazen behavior.

Experts aren't so shocked, though. They point to statistics that show rampant use of pirated software and counterfeit hardware in the U.S. as well as overseas. The problem is on the rise, as U.S. companies expand operations into countries where illegal use of IT products is widespread and enforcement of intellectual property laws is minimal.

For example, New York-based audit, tax and advisory firm KPMG LLP and the Fremont, Calif.-based Alliance for Gray Market and Counterfeit Abatement (AGMA) recently reported that as much as 10% of all high-tech products sold globally is counterfeit. And the Business Software Alliance (BSA) estimates that one-third of the software in use worldwide is pirated. The Washington-based organization also says that while the U.S. has the lowest piracy rate of any country, it's still a disappointing 21%.

To complicate matters, some of the hottest

spots in the global marketplace are the worst offenders.

For example, in China, 90% of software installed on computers is pirated, according to the second annual survey on piracy conducted last year by the BSA and market research firm IDC. Only Vietnam and Ukraine had higher piracy rates, at 92% and 91%, respectively, and more than a dozen other countries had rates of 80% or higher.

Cultural Challenge

According to AGMA and KPMG, China is among the countries where counterfeiting IT products has become a cultural norm. Their report says that "China attracts a huge influx of foreign direct investment resulting in high technology capability with adopted know-how, accessible distribution in densely populated areas and inconsistent regulatory enforcement."

Those factors — coupled with low wages, high unemployment and a largely uneducated workforce — create a favorable setting for counterfeiting, the report says.

The result: In countries like China, "the likelihood of buying counterfeit products is higher — and it might be more acceptable," says Gary Matuszak, global industry leader for electronics, software and services at KPMG.

That's particularly true for companies that employ local workers in their foreign offices, says Avi Barir, vice president of software digital rights management at Aladdin Knowledge Systems Ltd. in Israel.

"The cultures in these countries are such that local employees in [foreign offices of] U.S. companies would act the same as employees in local companies," says Barir, whose company makes products to help manufacturers prevent illegal use of their software.

That means your Chinese workforce may not be culturally attuned to the fact that counterfeiting is not acceptable. But it's essential that your employees here and abroad take the issue very seriously, for financial as well as ethical reasons.

Counterfeiting isn't just about losing a few bucks on bad software or hardware. Counterfeit and pirated products expose companies to worms, viruses and system failures, as well as potential lawsuits for copyright and patent infringements.

Hard to Spot

Aside from software, the products targeted by counterfeiters are often low-cost items that companies buy in high numbers, such as servers, laptops, cell phones, monitors, hard drives and network interface cards.

Counterfeiters often reverse-engineer the items, slap on fake logos and ship them out. Sometimes the quality is poor, but the doctored versions can often fool even tech folks.

Still, industry leaders agree that the problem could be kept in check if global companies put more controls in place to ensure that they and their international counterparts don't buy fakes. They say relatively simple measures could significantly reduce the volume of illegal IT products used in U.S. companies and abroad.

"Certainly, there are things CIOs can watch out for to mitigate, if not prevent, the purchase of counterfeit products," says Matuszak.

Here are some simple procedures that can lower your risk of buying counterfeit IT products.

Educate your workforce about the problem. CIOs need to instruct anyone authorized to buy IT equipment and supplies about how to avoid buying counterfeits.

Establish rules for purchasing hardware and software. For example, Matuszak says, decree that all cell phone purchases be made through the purchasing office by someone who knows how to guarantee that the product is legitimate.

Don't trust unknown vendors. Christian Lau, assistant vice president of IT at Franchise Services Inc. in Mission Viejo, Calif., the parent company of several franchise brands, buys only from an established retailer or directly from the manufacturers. And the company doesn't allow anyone outside the IT department to install software.

"Where you're getting into trouble is when you try to go through [unknown] resellers, or you buy on the used market or the international market, where you don't know the source," says Steve Bandrowczak, CIO at Lenovo Group Ltd. in Purchase, N.Y.

Be suspicious of highly discounted products. "A good price from someone you never heard of is probably a tip-off," says Nick Tidd, president of AGMA and vice president of sales and business compliance at 3Com Corp. in Marlboro, Mass.

Don't pass up a good deal out of fear, though. Tidd and others say there are companies — some of which might not be authorized dealers — that sell legitimate products at steep discounts.

"You can always call on the serial number and see if you're getting something legit," says Randall Palm, chief technology and information security director at the Computing Technology Industry Association Inc. (CompTIA) in Oakbrook Terrace, Ill. "Trust, but verify."

Don't be fooled by the presence of Web sites, business cards and other professional representations. Experts say that gray-market dealers often have all the trappings of legitimacy to allay customers' suspicions.

Ensure that domestic purchasing policies are followed in overseas offices. "I wouldn't go as far as saying everything has to be controlled centrally by purchasing only in the U.S., but you need to educate and follow through to make sure the China-based buyer is buying from an authorized [vendor or manufacturer]," Matuszak says.

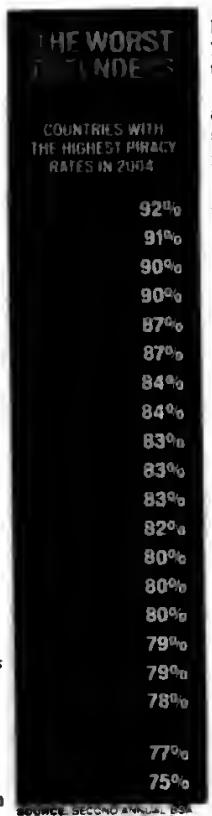
Bundle counterfeiting with other security issues. "If you're a CIO, you should have an information security/cybercrime policy in effect," says Frank Taney, chairman of the IT litigation practice group at Buchanan Ingersoll PC, a law firm in Philadelphia.

Foster a culture where counterfeiting and piracy of any kind is not tolerated. Paramount Pictures Corp., for example, requires managers to attend an annual meeting addressing business and ethical practices and to sign a business conduct statement each year, says Ed Trainor, senior vice president of information systems at the Los Angeles-based company and former president of the Society for Information Management. Policies against copyright infringement and illegal copying of materials are among the subjects covered.

There's nothing new about counterfeiting, Taney says, "but it is news to a lot of companies that this is a serious issue that they have to manage."

With counterfeit goods, even cheap ones, he says, "you're really not getting the value you think for your procurement dollars." **57675**

Pratt is a Computerworld contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.



SOURCE: SECOND ANNUAL BSA AND IDC GLOBAL SOFTWARE PIRACY STUDY MAY 2005

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FILENET

Double Dipping on Sarb-Ox

Some companies are leveraging Sarbanes-Oxley investments for business; others are leveraging business investments to comply. By Thomas Hoffman

MENTION the Sarbanes-Oxley Act to a CIO or a corporate executive, and he's likely to roll his eyes or grimace.

That's because most executives view the compliance requirements as a grim burden, like cleaning out a pack rat's basement.

Large public companies have had to devote thousands of staff hours and invest millions of dollars to identify, document and audit internal controls within their organizations just to comply with Section 404 of the federal law. Often the result has been that other strategic initiatives and revenue-enhancing IT projects had to be put on the back burner.

Those pressures have continued unabated in 2005. U.S. companies are expected to spend nearly $15.5 billion on compliance-related activities this year, with technology spending on Sarbanes-Oxley alone expected to top $1.7 billion, according to Boston-based AMR Research Inc.

Mindful of these investments, some savvy companies have leveraged their Sarbanes-Oxley spending to benefit the business in ways that go beyond mere regulatory compliance, yielding more bang for the buck.

Northbrook, Ill.-based Allstate Insurance Co., for example, has adopted a holistic view of regulatory compliance, including steps it has taken to address the requirements of Sarbanes-Oxley, the Gramm-Leach-Bliley Act and the Health Insurance Portability and Accountability Act, says Kim Van Nostern, Allstate's chief information security officer. "We recognize that all those regulations require the same types of controls; they just apply a slightly different filter," says Van Nostern.

Two years ago, Allstate developed its own compliance and control management system to help document controls in its various IT divisions. One of those tools is a scanning system created last year to identify worms and viruses and prevent them from attacking any of Allstate's systems.

Beyond helping Allstate ensure that it has effective security controls in order to comply with Sarbanes-Oxley, the scanning tool has delivered a nice side benefit. It enables the company's asset management specialists to constantly survey Allstate's corporate network and identify and track PCs, servers and other pieces of equipment that they previously didn't have a record of, says Van Nostern.

Catching Exceptions

At the end of 2004, American Electric Power Co. (AEP) began using software from Oversight Systems Inc. in Atlanta to help it monitor transactions in its accounts payable group. If a manager authorizes a purchase above his spending limit, the system recognizes it and spits out an exception report, says Mike Sullivan, assistant controller at the Columbus, Ohio-based power company.

Those capabilities have helped AEP comply with Section 404 requirements. But the company has also been able to use the software to determine whether any of its IT staffers or other workers have tried to modify software fields in other transaction systems for fraudulent purposes, says Sullivan.

The company plans to extend the use of the software to its accounts

Continued on page 44

WebSphere

"We recognize that all those regulations require the same types of controls; they just apply a slightly different filter."

RIM VAN NOSTERR, CHIEF INFORMATION SECURITY OFFICER, ALLSTATE INSURANCE

Continued from page 42

receivable department by year's end. "We should see some operational savings once we go through another [Section 404] cycle," Sullivan says, because AEP will be able to cut back on some of its internal controls testing.

In late 2000, San Ramon, Calif.-based Chevron Corp. purchased PricewaterhouseCoopers' Enterprise Security Architecture System (ESAS) to help it document its information security strategies. Since then, the software, which has been acquired by McLean, Va.-based Brabeion Inc., has helped Chevron develop a central repository for all of its security policies and controls, says Jay White, global information protection architect at Chevron.

"We were fortunate in having ESAS in place before Sarbanes-Oxley went into effect," says White. "We discovered that if you're ESAS-compliant, you're Sarbanes-Oxley-compliant."

The software, which Chevron runs on Windows 2000 supported by an Oracle database, has provided the energy company with multiple benefits beyond documenting its security controls to comply with Sectioo 404. ESAS, says White, "is like an instruction manual we've been able to use to formulate our information security strategy."

Streamlining Audits

In 2002, Regions Financial Corp. purchased AutoAudit, an automated auditing tool from Cokato, Minn.-based Paisley Consulting Inc. The Birmingham, Ala.-based financial services firm has been using the software to help its mortgage division capture and document all bills and invoices that might be needed for quality control audits, says senior audit manager Kevin Sullivan.

Regions has also customized the product to handle quality assurance reviews for its information security and internal audit groups, he says. Since then, the company has used AutoAudit and Paisley's RiskNavigator tools to help its officers certify that cootrols are in place to support various business processes as part of its Sarbanes-Oxley compliance efforts. But the tools have yielded other wide-ranging benefits, says Sullivan.

For instance, before the financial services company began using the AutoAudit system, each of its 13 internal audit groups — which monitor its trust, mortgage and other business units — had to create a new database in Lotus Notes prior to conducting an audit. Since Regions conducts between 200 and 300 internal audits per year, "we had all these different databases out there for administrative purposes," says Sullivan.

The company used the AutoAudit tool to consolidate those databases into a single system, thus generating efficiency gains for its internal audit department, he says. Sullivan says that the system has freed up auditors to do audits instead of devoting time to managing the hundreds of databases that were once in use.

Looking ahead, Regions hopes to use RiskNavigator to help it automate controls assessments in its burgeoning enterprise risk management activities.

No doubt about it: Sarbanes-Oxley compliance can be pricey. But with creativity and foresight, some companies are getting a lot more out of their compliance budgets. **57666**

Another Flavor

While some companies have double dipped on Sarbanes-Oxley compliance efforts to squeeze out additional business benefits, others have taken the opposite route: leveraging previous or unrelated software investments to address Section 404.

Fairchild Semiconductor

In August, **Fairchild Semiconductor International Inc.** installed software from **MetricStream Inc.** to help it streamline and improve its quality-related business processes. Fairchild has operations and plants around the world, from Malaysia to Germany, and it wanted to ensure commonality among the business processes in place at its various locations. For example, it was looking for a standard way of handling customer returns from a quality control standpoint, says Mark Rioux, vice president of global quality and reliability at the South Portland, Maine-based company.

The Web-based software should help Fairchild reduce the time required for customer transactions, in part by handling customer requirements more efficiently. But a byproduct of the software is that it's providing the company with auditable quality controls that will help it achieve Section 404 compliance, says Rioux.

"When we make a process change within our technology, the software allows us to detail what change is occurring, what product is going to be affected and when the change is expected to occur," he adds.

Vintage Petroleum

Vintage Petroleum Inc. in Tulsa, Okla., began using **Open Text Corp.**'s LiveLink software in its accounts payable department in 2001 to scan and track invoices that might otherwise get buried under the paperwork for the company's engineers, says Carrie Daigle, a network analyst at the independent oil and gas company.

But LiveLink, which runs on one of the company's Windows 2000 servers, also provides an audit trail for the accounting department to show when a payment for an invoice has been approved and by whom. That's the kind of control that external auditors look for companies to demonstrate as part of their Section 404 compliance activities.

American Standard Cos.

In June 2004, **American Standard Cos.** in Piscataway, N.J., installed a system called the SAP Compliance Calibrator from **Virsa Systems Inc.** in Fremont, Calif.

The software was intended to ensure that the 5,000-plus global users of the company's SAP ERP system had appropriate segregation of duties, says Johann Erasmus, manager of quality and process improvement for American Standard's internal audit team. The software enables employees who use the SAP system to access only those functions that are pertinent to their roles, says Erasmus. "It makes the process a lot less risky," he says.

But the system also helps the plumbing fixture and faucet manufacturer comply with Sarbanes-Oxley because it puts effective security controls in place for its financial and transaction systems.

– Thomas Hoffman

Career Watch

Were you the odd man out in your Texas State University class, entering the world of mainframe computing? Definitely. While at Texas State, I never met anyone who considered the mainframe to be a viable platform on which to build a career, much less anyone making the concerted effort to work with mainframes. Open-source, a.k.a. Linux, was what the majority of computer science students were moving toward, but they assumed they would work on Windows.

When talking with friends from college about mainframe development at BMC, I always hear surprise that development is still occurring and that I am willing to work in a "doomed field." The emphasis in school is on new trends. I suspect that, since students never work with or research mainframes, it creates the incorrect assumption that they are a thing of the past.

When did you decide to head in that direction? I'm lucky to be a second-generation programmer, and as I was looking for internships during my sophomore year, my mother heard from a former co-worker that BMC had created a mainframe internship program. The following two summers, I worked as a QA intern on the Recovery Manager solution. Those experiences demonstrated the dynamic nature of the mainframe.

Did the program at Texas State adequately prepare you for mainframe programming? Most of our development is actually done in Windows, and we use a build process that makes it easy to port over to the mainframe. Since my education focused on C/C++, I was prepared in that sense. On the other hand, I've never encountered anything like the mainframe [user interface]. When you're first getting into the mainframe, you suddenly need to understand what SDSF, TSO, ISPF and JES mean. What you achieve on a PC by double-clicking on a folder involves typing a command like "dslist 'myid.thisdata.*'" on a command line on the mainframe. Fortunately, I work with experienced mainframe developers who can help with all tasks, from complex to trivial.

On that note, one aspect of my mainframe career that is particularly appealing is that most programmers my age don't give the mainframe a second thought. At the same time, the supply of experienced mainframe programmers is going to diminish rapidly over the next couple of decades. The market for mainframe developers could resemble that for Cobol programmers just before Y2k. Cobol had been on the way out, yet programmers with Cobol experience were highly sought after during the late '90s. The mainframe has been "on the way out" for years, but it remains strong, and the need for mainframe developers is even stronger.

TECH JOB CUTS UP 18%

TECHNOLOGY-SECTOR job cuts for the first three quarters of the year were up 18.9% over the same period in 2004, according to Challenger, Gray & Christmas Inc., a global outplacement company in Chicago.

There are some promising indicators, according to Challenger. The number of cuts announced between July and September was 24% lower than the 54,701 job cuts reported during the same period in 2004, according to the survey. But unlike other U.S. industries that have seen cuts, the tech segment has lost jobs without a similar rate of hiring to offset the cuts, John Challenger, CEO of the company, said in a statement.

The only significant tech-sector job growth occurred in the professional services area, where employment in computer systems design and related services grew by about 30,000 since September 2004. Management and technical consulting service firms also added about 20,000 jobs during that period.

– Todd R. Weiss

Gone in Three Quarters

TECH-SECTOR JOB CUTS:

FIRST THREE QUARTERS OF 2005:	FIRST THREE QUARTERS OF 2004:
140,696	118,427

Work/Life Balance

Percentage of respondents who say they are satisfied with the way they balance personal and workplace demands.

70% of corporate employees

78% of government workers

82% of small-company employees

BASE: 1,891 employees nationwide
SOURCE: Rasmussen Reports LLC, August 2005

67%

Number of CIOs who believe their jobs are at risk because they aren't delivering results fast enough to satisfy company leaders.

SOURCE: Gartner Inc. preconference survey of attendees at October's Gartner Symposium/ITxpo

Women and the Unexamined IT Life

The *Collegiate Times*, the student newspaper at Virginia Tech, reports that three scholars at the school have identified five factors that influence women who are interested in or are pursuing careers in IT. The article says study participants had certain shared characteristics, including minority status and parents — especially mothers — who supported their career choices. The National Science Foundation-funded study (which included telephone interviews with and surveys of 1,026 young women at high schools, universities and community colleges across Virginia) found that they began using a computer at an early age for communication and information purposes, not usually to play computer games like their male peers, and have a positive view of IT professionals and their careers. They don't think about it in terms of being a "geek" or "nerd," said one researcher. Most interesting, perhaps, is the finding that these women haven't discussed career options with many others, the researcher said. In fact, those who seek more information tend to be less interested in pursing a career in IT. ● 57004

Page compiled by Jamie Eckle.

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TECH JOB CUTS

TECHNOLOGY-SECTOR job cuts for the first three quarters of the year were up 19.8% over the same period in 2004, according to Challenger, Gray & Christmas Inc., a global outplacement company in Chicago.

There are some promising indicators, according to Challenger. The number of [illegible] and September was 24% [illegible] 84,701 job cuts reported during the same period in 2004. [illegible] savings. But unlike other [illegible] that have seen cuts, the tech segment has lost jobs without a similar rate of hiring to offset the cuts, John Challenger, CEO of the company, said in a statement.

The only significant tech-sector job growth occurred in the professional services area, where employment in computer systems design and related services grew by about 20,000 since September 2004. Management and technical consulting services firms also added about 20,000 jobs during that period.

– Patrick Thibodeau

Gone in Three Quarters

TECH-SECTOR JOB CUTS:

BASE: 1,691 employees nationwide
SOURCE: Rasmussen Reports LLC, August 2005

67%

Number of CIOs who believe their jobs are at risk because they aren't delivering results fast enough to satisfy company leaders.

SOURCE: Gartner Inc. preconference survey of attendees at October's Gartner Symposium/Itxpo

Q&A

Were you the odd man out in your Texas State University class, entering the world of mainframe computing? Definitely. While at Texas State, I never met anyone who considered the mainframe to be a viable platform on which to build a career, much less anyone making the concerted effort to work with mainframes. Open-source, a.k.a. Linux, was what the majority of computer science students were moving toward, but they assumed they would work on Windows.

When talking with friends from college about mainframe development at BMC, I always hear surprise that development is still occurring and that I am willing to work in a "doomed field." The emphasis in school is on new trends. I suspect that, since students never work with or research mainframes, it creates the incorrect assumption that they are a thing of the past.

When did you decide to head in that direction? I'm lucky to be a second-generation programmer, and as I was looking for internships during my sophomore year, my mother heard from a former co-worker that BMC had created a mainframe internship program. The following two summers, I worked as a QA intern on the Recovery Manager solution. Those experiences demonstrated the dynamic nature of the mainframe.

Did the program at Texas State adequately prepare you for mainframe programming? Most of our development is actually done in Windows, and we use a build process that makes it easy to port over to the mainframe. Since my education focused on C/C++, I was prepared in that sense. On the other hand, I've never encountered anything like the mainframe [user interface]. When you're first getting into the mainframe, you suddenly need to understand what SDSF, TSO, ISPF and JES mean. What you achieve on a PC by double-clicking on a folder involves typing a command like "dslist 'myid.thisdata.*'" on a command line on the mainframe. Fortunately, I work with experienced mainframe developers who can help with all tasks, from complex to trivial.

On that note, one aspect of my mainframe career that is particularly appealing is that most programmers my age don't give the mainframe a second thought. At the same time, the supply of experienced mainframe programmers is going to diminish rapidly over the next couple of decades. The market for mainframe developers could resemble that for Cobol programmers just before Y2k. Cobol had been on the way out, yet programmers with Cobol experience were highly sought after during the late '90s. The mainframe has been "on the way out" for years, but it remains strong, and the need for mainframe developers is even stronger.

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PAUL GLEN

You're Fired!

WHILE DONALD TRUMP may issue these words with mock sadistic glee, most of us with a tad of compassion struggle with uttering the phrase, "You're fired." And it's right that we should.

In the popular press, when we hear about firings, it's usually from the perspective of the fired person rather than the boss. The person doing the firing is variably portrayed as the steely, callous automaton, the bad guy or sometimes the cruel, sadistic, power-hungry heavy.

In truth, most bosses are none of these things. They agonize over the decision to fire someone, and even after making that decision, they suffer bouts of guilt, depression, sleeplessness and fear. The whole experience is more than unpleasant and sometimes even debilitating for the manager who has to do the deed.

PAUL GLEN helps technical organizations to grow better leaders and managers to perform at their best. He is the author of the award-winning book *Leading Geeks*. Contact him at info@paulglen.com.

But bosses get no sympathy for the emotional turmoil that goes with the job. When it comes to handling the negative personal fallout of firings, you're on your own.

In my time as a manager, I discovered that the better prepared I was for both the decision to fire and the event itself, the more comfortable — and less emotional — I was with what needed to be done.

Over time, I developed two sets of rules that helped me prevent many of the unpleasant feelings about firing someone.

The first rules governed making the decision about whether to fire, and the second guided how to fire. I found that if I followed these rules, I felt comfortable that I had done the best that I could.

(I'm not sure whether your lawyers would agree with all of these, but I rarely had the advice of lawyers in these situations. These rules are strictly for peace of mind in making the decision, not necessarily for freedom from wrongful-termination lawsuits.)

Deciding Whether to Fire

1. The person being fired should never be surprised by what's happening to him.

2. The person being fired had to have been given explicit warnings prior to being fired.

3. The person being fired had to have been advised of specific steps he needed to take to keep his job.

4. The person being fired had to have been offered support to help him learn what he needed to learn to keep his job.

5. The person being fired had to have been given a reasonable period of time to comply with your expectations. The nature of the employee's response to the offer of help could significantly expand or contract what's considered a reasonable period of time.

6. Illegal behavior or actions opening the company to significant legal risk could nullify all the other rules. If someone was involved in illegal activities related to work or actions that could be considered sexual harassment, he wouldn't deserve the same degree of help and warnings that others get.

Carrying Out the Decision to Fire

1. Never delegate the dirty work. If I decided to fire someone, I had to be willing to look him in the eye and tell him so.

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4. Use simple, factual, nonaccusatory language. "I'm sorry to inform you that today will be your last day with us at XYZ Corp.," instead of, "You just aren't pulling your weight."

5. Don't go into the reasons for the dismissal. Since it shouldn't be a surprise, he already knows what the problem is.

6. Don't answer any questions about the decision or the performance of the person being fired. The time for that has passed. Your answers won't be heard anyway. Questions about the mechanics of exit should be referred to someone else.

7. Have another person handle the details of the exit. The last thing that the fired person wants is to spend the next half an hour with you going over the minutiae of last paychecks and insurance.

While firing staff is among the most unpleasant things that a manager must do, with a structured approach, the discomfort for everyone involved can be minimized. **57618**

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SQL Server

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Mediterranean Shipping Co., a Geneva-based company that operates container ships, is already running the new database on production systems. As part of Microsoft's Technology Adoption Program [QuickLink 57875], Mediterranean Shipping beta-tested SQL Server 2005 for nearly a year before going live with the Enterprise edition several months ago.

Fabio Catassi, the shipping company's chief technical officer, said end users experienced a "dramatic reduction" in the time needed to run queries after Mediterranean Shipping upgraded to a 64-bit version of SQL Server 2005 running on a Unisys ES7000 server. The performance gains were also a result of high-availability features such as the database's online index-rebuilding capability, he said.

SQL Server 2005 doesn't have everything Catassi is looking for. Some promised capabilities, most prominently database mirroring for automatic backups of information, aren't due to be available until next year. Meanwhile, his personal wish list still includes features such as the ability to load and compare multiple performance monitoring logs from different systems.

Benefit to Developers

Craig Steele, a senior network engineer at Progent Corp., an IT consulting firm in San Jose, said the most tangible improvements in SQL Server 2005 likely will benefit developers more than database administrators. For example, he pointed to the integration of the database with Visual Studio 2005, which is also being launched this week.

"Developers will be happy with the new SQL Server, but if you're an IT professional, whoop-dee-doo-dah-day," said Steele, who consults with corporate users on projects involving SQL Server and Microsoft's Exchange Server.

Steele added that he doesn't view the new release as a huge shift in technology from its SQL Server 2000 predecessor. "I know pure SQL [Server] people will love it," he said. "I'm just not sure about the rest of the world."

Raichura said the support for Microsoft's Common Language Runtime technology via Visual Studio will let him avoid having to go to multiple developers with different specialties. "I can natively write stored procedures straight into software," he said. "This increases my resource pool because it reduces the distinction between software developers and architects."

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DesignMind Inc., a software development firm in Oakland, Calif., has been using "a narrow set" of SQL Server 2005's features in live applications for several months, said Mark Ginnebaugh, the firm's president and head of the San Francisco SQL Server User Group.

Now DesignMind is moving forward on more extensive projects, such as using SQL Server 2005 to set up a large data mart for one client, Ginnebaugh said. Doing that on top of the client's existing DB2 database "would have been far more costly and difficult," he added. **50005**

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MICROSOFT USERS last week said they're pinning their hopes for future business intelligence projects on new SQL Server 2005 features designed to boost performance and ease end users' reliance on IT staffers.

The new version of the database adds enhanced features for building and managing data integration processes, analyzing BI data and building reports, Microsoft said.

Mayur Raichura, managing director of information services at The Long & Foster Cos. in Fairfax, Va., said he hopes the new Analysis Services feature in SQL Server 2005 will allow him to analyze data about customers who use the real estate company's Web site and then proactively provide them with data tailored to their needs.

The analysis features in the previous SQL Server 2000 version didn't scale well enough to handle such tasks, he added.

The new analysis tools in SQL Server 2005 are designed to integrate online analytical processing and relational reporting to help users spot correlations and patterns in data mining applications, according to Microsoft.

Barnes & Noble Inc. has been migrating its data warehouse from SQL Server 2000 to the new release since June, said Chris Troia, CIO at the New York-based retailer.

The data warehouse, which holds about 4TB of sales and inventory data, will grow to 14TB within a year, he added.

One of the biggest advantages of SQL Server 2005, Troia said, is better-performing extract, transform and load tools.

The tools, which are part of the new version's Integration Services, offer improved performance and management capabilities, Microsoft said, adding that users shouldn't have to buy enterprise-class data integration tools.

Eliot Gardener, a project manager at Barnes & Noble, noted that SQL Server 2005 requires developers to write fewer scripts and less code to access data.

In January, Barnes & Noble plans to begin using the production release of Report Builder, a new tool in the database designed to allow nondevelopers to create and publish BI reports.

Now, developers must do a lot of hand coding to develop front-end presentations for reports, according to Troia. Using the beta of the Report Builder software, developers are writing the presentation in about a half-hour, slashing a day or two from the previous report-development process, he said.

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"Their BI platform gives them an opportunity to get their foot in the door even at companies who aren't using SQL Server as their database management platform," he said, noting that the BI technology can work with non-Microsoft data sources.

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FRANK HAYES ▪ FRANKLY SPEAKING

Out of the Loop

YOU'VE SEEN THEM BEFORE — news stories or ads pushing yet another code generator that "anyone can use to create real applications." Infuriating, aren't they? The basic pitch is always the same: Business users can build their own applications, cutting the IT department out of the process and thus saving time, money and misery.

Yeah, it's insulting. It strokes users' egos and plays on prejudices against those uncooperative, obstructionist control freaks in IT with their requirements processes and long pipelines and technospeak about why they didn't deliver what users wanted.

But don't get mad. After all, what exactly do you stand to lose?

Think about it: You've always had users who built their own applications, at least as long as there have been desktop computers. Users wrote them in Basic, as batch files, with macros, with personal database programs. Most of all, they wrote them in the most powerful user-oriented development environment ever created: the electronic spreadsheet.

Those user-built applications became useful. Other users got copies. Pretty soon, the ingenious spreadsheet hack that worked so well for a power user and a few friends spread through a whole department and beyond — and hit a wall. The network bogged down, or the database server groaned under the load, or the data users wanted wasn't easy to import.

And *that's* when IT was brought in to make this user-built monstrosity more scalable and interoperable — in other words, to turn it into a real application.

See? There's nothing new to the idea of cutting IT out of the software development process. Users have always cut you out of the loop — until there's a problem. *Then* they want you to make it work.

And in the midst of trying to pick through spaghetti code or badly formed macros or impenetrable spreadsheet formulas, it's easy to lose sight of what users have actually done: relieved you of some of the hardest parts of app development.

When users build their own working software, you don't have to pry out of them what it is they want. You don't have to wonder whether they'll find an application useful. You don't have to guess about the business process or tinker with look and feel or experiment with prototypes.

You've *got* the prototype. It may be the messiest sketch of an application you've ever seen, but it *is* what users are asking for. That you can be sure of.

So the heavy lifting of requirements collection, prototyping, user acceptance — that's already been done for you. All you have to do is produce a cleaner, more scalable and interoperable clone of what users have already defined, accepted and enhanced. That's the sort of thing you're good at, right?

Wait, it gets better. You may not even have to do that. Sometimes you can clear bottlenecks in these user hacks with a few stored database procedures or precalculated values. A little back-end work, and suddenly the database and network load drops. Sure, the user-built application is as ugly as ever. But now it's ugly and scalable — and done almost overnight, instead of at the end of a long development project.

In other words, with user-built apps, you have more options, a better understanding of the need, guaranteed user involvement and management support, a high likelihood that you'll deliver a winning application — and plenty of credit for IT *and* users to share when the project is a success.

So don't get mad at software marketing bozos who goad users to cut IT out of the loop. Let users build their little apps. They'll cut you out of the loop, all right — just long enough to take the riskiest and most miserable slice of the job off your hands.

Think you can bear to lose that?

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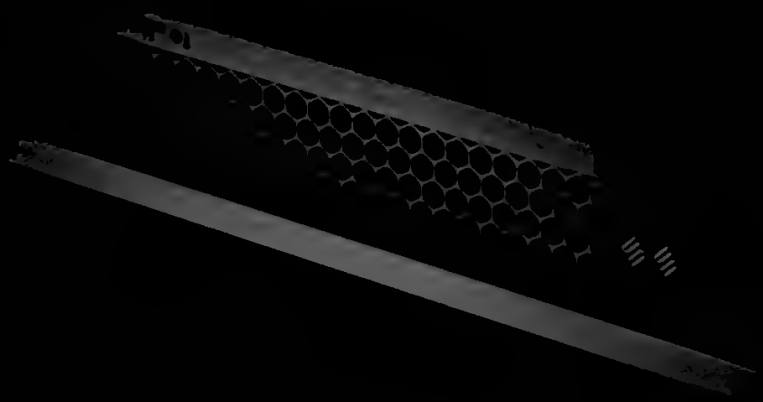

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